Pittsburgh
PENNSYLVANIA
IAFP 2022
July 31–August 3

IAFP 2022 PROGRAM BOOK

International Association for Food Protection®
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Navigating Food Safety in a Changing World

October 26 – 27, 2022
Shanghai

Join 500+ global scientists, industry executives, regulators, and academics who make a difference in food safety. Attend in-person or virtually to address these recent developments:

Advancing Food Safety Through Partnerships
Alternative Protein, Cellular Meat & Plant Based Food
Regulatory Issues on Alternative Protein for Conventional Animal Meat
Evidence-Based Risk Communications
Managing the Safety of Tomorrow's New Food & Technologies
Non-Animal Methods for Safety Testing (NAMI)
Rapid Microbial Detection & Sample Preparation
Food Allergen Control in the Food Industry
Hot Topics
A Collaborative Approach to Food Safety Education
Historical Review of HACCP: Progress & Challenges
Special Purpose Food
Risk Assessment for Multiple Chemicals Hazards
Applications of New Analytical Technology & Data Analytics
Mycotoxin
Mineral Oil Contamination in Food
Improving Food Safety Performance Through Setting and Measuring Food Safety KPIs
TCM and Food
FAO & Codex Panel Discussion

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WELCOME FROM THE EXECUTIVE BOARD

PRESIDENT
Ruth L. Petran
Ruth Petran Consulting, LLC

On behalf of the Executive Board, it is my pleasure to welcome you to IAFP 2022 and to Pittsburgh, Pennsylvania. We are so thrilled to be gathering fully in person this year! However, in support of continued public health, we urge you to take whatever precautions you feel are necessary.

Thousands of colleagues and friends from around the globe are here to experience the leading food safety conference and to help fulfill the Association's mission: "To provide food safety professionals worldwide with a forum to exchange information on protecting the food supply."

Food protection remains a top priority in today's interconnected world. Our meeting will help you stay in touch with current and emerging issues, the latest science, and solutions to new and ongoing problems. Of equal or greater importance is the opportunity to network with colleagues and developing scientists… often the most valuable information one can gather is in an impromptu conversation in the hallway! Take advantage of extended morning and afternoon breaks to allow for additional opportunities to connect with your fellow attendees. Thank you for joining us to be part of the solution for tomorrow's food safety challenges.

The Executive Board offers a special thank you to Carrie Rigdon, Program Committee Chair, and the entire Program Committee for organizing another exceptional lineup of symposia, roundtables, technical presentations, posters and interactive sessions. The only thing in short supply will be the time needed to attend all of the interesting presentations! Your greatest challenge will be to determine where best to spend your time, so review the program carefully and plan your time accordingly…preferably using the IAFP 2022 App!

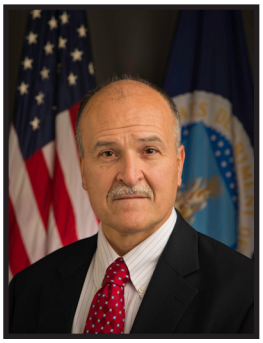
We extend our sincere gratitude to our exhibitors, sponsors and long-time attendees for making each IAFP Annual Meeting highly successful every year. This meeting would not be the same without your continued and dedicated support.

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

Together, we are Advancing Food Safety Worldwide®!

Ruth Petran, IAFP President

PRESIDENT-ELECT
Michelle Danyluk
University of Florida



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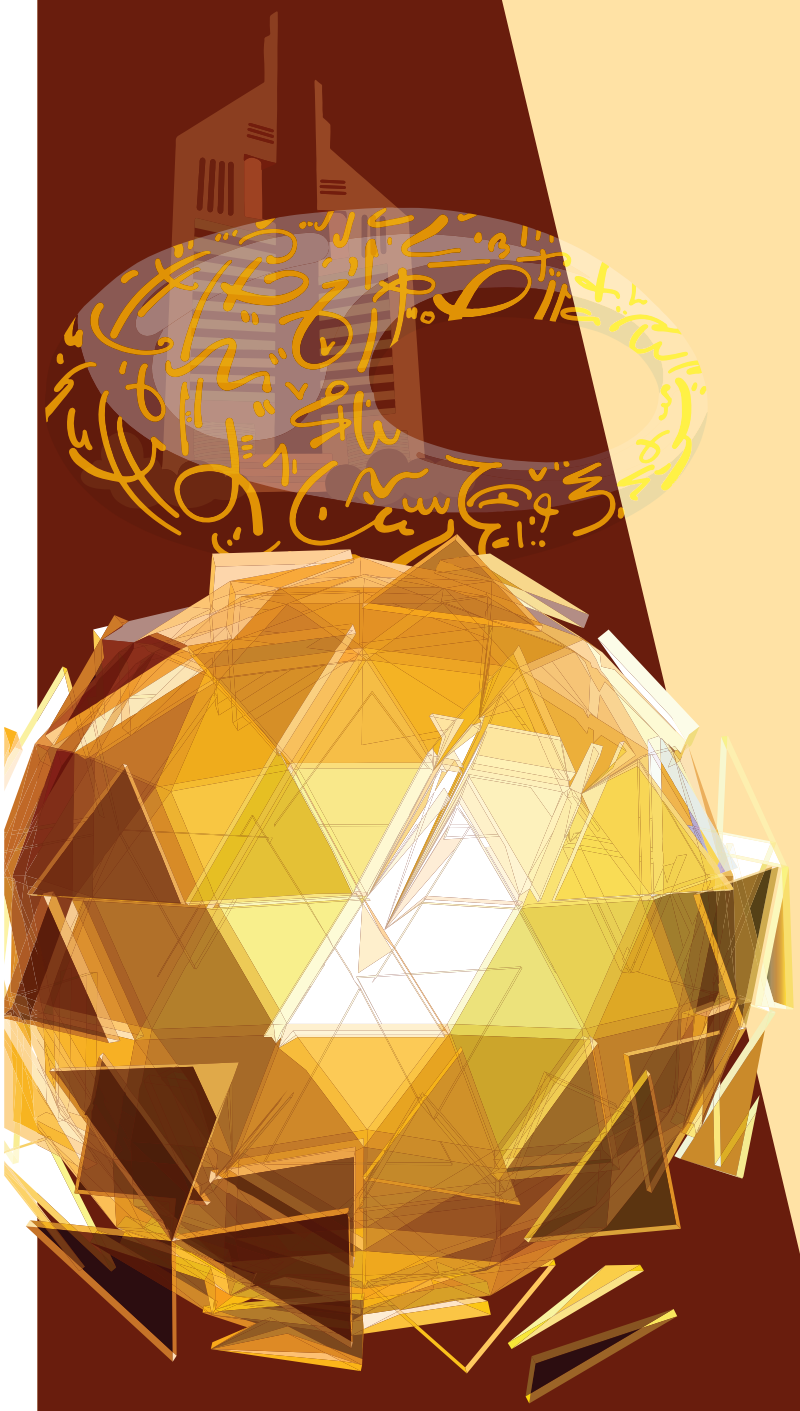

FUTURE DIRECTIONS IN FOOD SAFETY AND SECURITY

16th DUBAI INTERNATIONAL FOOD SAFETY CONFERENCE

1-3 November, 2022

ABSTRACT SUBMISSION

Submit abstracts for the Scientific Poster presentation that will be held on the 1st – 3rd November 2022

Last date to submit Abstracts
15th September 2022

Visit our website
www.foodsafetydubai.com
for further details!

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LOCAL PITTSBURGH WELCOME

Giant Eagle is pleased to welcome you to Pittsburgh for the IAFP 2022 Annual Meeting. We were founded here more than 90 years ago, and we're proud to call Steel City our home. There's no better community to host this conference, and we know you'll enjoy your time here.

The IAFP Annual Meeting is an important event for anyone dedicated to food safety. This is a time to learn, but it's also a time to collaborate. We want to cultivate an environment where we can all bring our best ideas to the table. Please feel free to express your opinions, ask plenty of questions, and above all, share your best ideas. We have subject matter experts, scientists, and professionals from across the country here for continual improvement in the areas of food protection, food safety and environmental stewardship. Your ideas and experiences are invaluable as we set goals and establish strategies to improve across the industry.

While you're here, we hope you spend your free time exploring what Pittsburgh has to offer. We're sure you'll agree that this mid-size city in western Pennsylvania has a small-town feel. We're located at the junction of three rivers, which gives us a unique terrain and natural beauty. Culturally, this community is thriving, full of energetic, hard-working people. Take time to visit one of our world-class restaurants or one of the more than 40 craft breweries. If your schedule allows, you can't go wrong visiting any of our Guilded Age attractions, like the Carnegie Museum of Natural History or the Phipps Conservatory and Botanical Gardens. If adventure is more your style, you don't have to travel too far for sailing, whitewater rafting and hiking trails.

Again, enjoy your time here in Pittsburgh, and we hope the meeting proves to be an invaluable experience for you. We just have one request: be sure to come back again soon!

giant eagle

Terry Levee
Sr. Director, Food Safety and Regulatory Compliance

Pittsburgh PENNSYLVANIA IAFP 2022 July 31– August 3

Schedule

All events held at the David L. Lawrence Convention Center unless noted.

FRIDAY JULY 29

IAFP Workshops – 8:00 a.m. – 5:00 p.m.
Workshop 1 – Next Generation Sequencing: A Tutorial and Hands-On Workshop to Help Understand This Emerging Technology – 1.5 Days – Friday, July 29 (1:00 p.m. – 5:00 p.m.) and Saturday, July 30 (8:00 a.m. – 5:00 p.m.)

SATURDAY, JULY 30

IAFP Workshops – 8:00 a.m. – 5:00 p.m.
Workshop 2 – Microbiological Sampling and Testing: ICMSF Workshop for Risk Managers and Food Business Operators – 1 Day – Saturday, July 30 (8:00 a.m. – 5:00 p.m.)
Workshop 3 – Mold Contamination in Foods and Food Production Facilities – Monitoring, Sampling, Testing and Identification Techniques – 1 Day – Saturday, July 30 (8:00 a.m. – 5:00 p.m.)
Workshop 4 – Use and Interpretation of the USDA-ARS Predictive Microbiology Information Portal, Pathogen Modeling Program (PMP) and Combase – 1 Day – Saturday, July 30 (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 31

Affiliate Council Meeting • 7:00 a.m. – 9:00 a.m.
Committee and PDG Meetings • 8:00 a.m. – 5:00 p.m.
Student Luncheon (ticket required) • 12:00 p.m. – 1:30 p.m.
Editorial Board Reception (by invitation) • 4:30 p.m. – 5:30 p.m.
Opening Session and Ivan Parkin Lecture • 6:00 p.m. – 7:30 p.m.
Cheese and Wine Reception • 7:30 p.m. – 9:30 p.m.
Exhibit Hours • 7:30 p.m. – 9:30 p.m.

MONDAY, AUGUST 1

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.
U.S. Regulatory Update • 12:30 p.m. – 1:30 p.m.
Exhibit Hall Reception • 5:15 p.m. – 6:15 p.m.

TUESDAY, AUGUST 2

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, AUGUST 3

Symposia, Roundtable & Technical Sessions • 8:30 a.m. – 3:30 p.m.
Poster Session • 8:30 a.m. – 3:30 p.m.
Networking Lunch • 11:45 a.m. – 1:30 p.m.
John H. Silliker Lecture • 4:00 p.m. – 4:45 p.m.
Awards Reception and Banquet • 6:00 p.m. – 9:30 p.m.

*Events held at Westin Pittsburgh

GENERAL SESSIONS

OPENING SESSION

SUNDAY, JULY 31

6:00 P.M. – 7:30 P.M.

IVAN PARKIN LECTURE

Lucia E. Anelich, Ph.D.
Adjunct Professor
Director
Anelich Consulting
Pretoria, South Africa

U.S. REGULATORY UPDATE SESSION

MONDAY, AUGUST 1

12:30 P.M. – 1:30 P.M.

Frank Yiannas, MPH
Deputy Commissioner,
Food Policy and Response
U.S. Food & Drug
Administration
Silver Spring, MD, USA

Sandra Eskin
Deputy Under Secretary
for Food Safety
U.S. Department
of Agriculture
Washington, D.C., USA

CLOSING SESSION

WEDNESDAY, AUGUST 3

4:00 P.M. – 4:45 P.M.

JOHN H. SILLIKER LECTURE

Katherine M.J. Swanson, Ph.D.
Retired, KMJ Swanson Food Safety, Inc.
Mendota Heights, MN, USA

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(7/6/2022 v10)

General Information

Luggage Check Room

The Luggage Check Room is located on the *Concourse* by IAFP Registration and is available Sunday through Wednesday. The hours are listed below:

Sunday, July 31
8:00 AM —10:00 PM

Monday, August 1

8:00 AM – 6:30 PM

Tuesday, August 2
8:00 AM – 6:30 PM

Wednesday, August 3
8:00 AM —10:00 PM

Speaker-Ready Room

The Speaker-Ready Room is located in *Room 308* and is available for speakers Sunday through Wednesday, 7:00 a.m. to 5:00 p.m.

Cell Phone Policy

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

Recording Policy

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

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

Meeting App

Download the IAFP 2022 App for the most update information.

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Internet Café

The Internet Café is in the IAFP Registration area.

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WiFi Internet

Complimentary WiFi Internet is available throughout the convention center.

To access:

Network: IAFP2022
Password: iafp2022

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Ruth Petran, Ruth Petran Consulting, LLC

IAFP REGISTRATION HOURS

Saturday, July 30 – 12:00 p.m. – 7:00 p.m.
Sunday, July 31 – 8:00 a.m. – 9:00 p.m.
Monday, August 1 – 7:30 a.m. – 5:30 p.m.
Tuesday, August 2 – 8:00 a.m. – 5:30 p.m.
Wednesday, August 3 – 8:00 a.m. – 12:00 p.m.

Schedule-at-a-Glance

All sessions will be held at the David L. Lawrence Convention Center

	Ballroom A - C	Ballroom B - C	301 - 303	304 - 305	310 - 311	315 - 316
SUNDAY, JULY 31						
Sunday 6:00 p.m. – 7:30 p.m.	**Opening Session – Ivan Parkin Lecture** – *Ballroom A-C* *Out of Africa* - Lucia Anelich, Anelich Consulting					
MONDAY, AUGUST 1						
Monday 8:30 a.m. – 12:15 p.m.	RT1 – How Relevant is Finished Product Testing for Pathogens to Public Health Outcomes?		S1 – *Salmonella* in Poultry: Issues and Solutions	S2 – Recent Developments in Applications of Predictive Tools for Meat and Poultry Products	Technical Session 1 – Modeling and Risk Assessment	RT2 – Flour and Shiga Toxin-Producing *Escherichia coli* (STEC): What Can be Done to Prevent Outbreaks?
	RT3 – COVID-19: What Have We Learned to Make Our Food Systems More Resilient in the Future?		RT4 – The Intersection of Adjacent and Nearby Land Use and Produce Safety	RT5 – Practical Approaches to Enhance Food Safety Culture: Shared Learnings from a Dairy Industrywide Program		RT6 – What Do We Know and Still Not Know about Pathogen Control in Low-Moisture Foods?
Monday 12:30 p.m. – 1:30 p.m.	**U.S. Regulatory Update on Food Safety –** *Ballroom A-C* Frank Yiannas, U.S. Food & Drug Administration (FDA) and Sandra Eskin, U.S. Department of Agriculture (USDA)					
Monday 1:30 p.m. – 5:15 p.m.	RT7 – Recent State and Local Outbreak Investigations		S11 – Clean-Label Antimicrobial Innovations and Applications		S12 – Using Consumer Research to Inform Labeling Policy for Food Products	S13– Metagenomics: Where Do Viruses and Parasites Fit in?
	RT8 – Hold the Phone! The Role of Celebrity Chefs and Influencers in Food Safety Messaging		S18 – Advances in Antimicrobial Technologies and Their Translation into Industry Practices	RT9 – Can We Rely on Third Party Auditors to Assess Whether a Supplier's Microbial and/or Chemical Test Methods are the Right Fit for the Food Commodity?	RT10 – Back to Front and Front to Back: How to Manage out Toxins and Naturally Occurring Hazards throughout the Supply Chain	S19 – Parasites of Global Public Health Relevance
TUESDAY, AUGUST 2						
Tuesday 8:30 a.m. – 12:15 p.m.	S24 – Foodborne Disease Outbreak Update		S25 – Method and Validation Hurdles to Substantiate Allergen Claims	S26 – Virtual Food Safety Monitoring, Auditing and Artificial Intelligence Applications	S27 – What to Expect When You're Exporting: Using FDA's Export Certification Program	S28 – Data-Driven Sanitation Chemistry Selection: Does It Work Against Biofilms?
			S33 – Global Recommendations on Risk Assessment of Allergens from the Ad Hoc Joint FAO/WHO Expert Consultation	RT11 – Mission Impossible? Bringing Equivalency to Virtual Audits and Inspections	S34 – Persistence of Enteric Viruses in Low Moisture Environments	S35 – Cleaning: The Perennial Overlooked Step in Sanitation and Vital Importance to Proper Environmental Surface Sanitization and Disinfection
Tuesday 12:30 p.m. – 1:15 p.m.	**IAFP Business Meeting** – *310 - 311*					
Tuesday 1:30 p.m. – 5:15 p.m.	S40 – Novel Foods, Novel Challenges: Food Safety Concerns in Plant-Based and Novel Food Products		S39 – Developments in Sample Preparation: Implications in Pathogen Detection When Difficult Matrices are Involved	S41 – Food Safety Aspects of Controlled Environment Agriculture Systems for Fresh Produce Production: Current Industry Practices and Future Needs	S42 – Not All Acids are Created Equal	RT13 – Identity Matters: Building a More Inclusive Workplace for Women in Food Safety
	S47 – Consequences of Proliferating *Listeria* Species for Detection Methods			S48 – Addressing Urban Agriculture with a One Health Approach to Food Safety Vulnerabilities and Successes	RT14 – Strengthening Food Safety Education and Research across Programs and Departments in the Universities Food Watch Presentation	RT15 – Life after Graduate School and Beyond Academia
WEDNESDAY, AUGUST 3						
Wednesday 8:30 a.m. – 12:15 p.m.		RT18 – Application of New Technologies for Improved Food Safety	S51 – Safety and Quality of Water Used and Reused in Fresh Produce Supply Chains	RT19 – Moving Closer to Zero – Challenges and Opportunities for Reducing Children's Exposures to Toxic Elements from Foods	Technical Session 10 – Viruses and Parasites and Epidemiology	S52 – Data Trusts for Food Protection
		RT20 – Rapid Methods and Automation in Food Microbiology: 40 Years of Developments, Promises, and Disappointments	S57 – What Environmental Surveillance and Water Quality Can Tell Us about Antibiotic Resistant Bacteria in Pre-Harvest Environments	S58 - Gluten in Fermented or Hydrolyzed Foods – Regulatory, Consumer, and Analytical Perspectives		RT21 – Watching GRAS Grow: Understanding What It Means to be GRAS in the U.S
Wednesday 1:30 p.m. – 3:30 p.m.		S62 – Mitigating The Risk of *Salmonella* in Food Products	S63 – Precision Genomics: A Toolbox for the New Era of Food Safety	S64 – The Regulation of Food Ingredients in Diverse Global Markets	S65 – Lessons Learned from Produce Safety Rule Trainings to International Audiences in Latin America	S66 – To Biofilm, or Not to Biofilm: *Listeria monocytogenes'* Emerging Existential Dilemma
Wednesday 4:00 p.m. – 4:45 p.m.	**John H. Silliker Lecture** – *Ballroom B - C* *The Power of Diverse Perspectives for Effective Food Safety Management* – Katherine M.J. Swanson, KMJ Swanson Food Safety, Inc.					

Schedule-at-a-Glance

All sessions will be held at the David L. Lawrence Convention Center

	317 - 318	319	401 - 402	403 - 404	405	406	Exhibit Hall
SUNDAY, JULY 31							
	Opening Session – Ivan Parkin Lecture – *Ballroom A - C* *Out of Africa* - Lucia Anelich, Anelich Consulting						
MONDAY, AUGUST 1							
Monday 8:30 a.m. – 12:15 p.m.	S3 – Challenges and Strategies in Implementing Food Safety Management Systems in Multinational Companies	S4 – Implementation of HACCP-Based Egg Product Inspection	Technical Session 2 – Molecular Analytics, Genomics and Microbiome	Technical Session 3 – Developing Scientist Student Competition Finalist	S5 – Non-Destructive Superior Sampling	S6 – Food Safety by Design	Poster Session 1 – Animal and Pet Food Safety, Dairy, Data Management and Analytics, Epidemiology, Food Defense, Food Law and Regulation, Meat, Poultry and Eggs, Pre-harvest Food Safety, Produce, Viruses and Parasites, Water
	S7 – Addressing the Global Threat of Antimicrobial Resistance Using One Health Approach	S8 – Continuing the Comanagement Conversation: Establishing a Conceptual Framework for Understanding Trade-Offs and Synergies between Food Safety and Conservation Aims			S9 – Infectious or Not Infectious? Advances in Virus Quantification and Translation to Health Risk	S10 – Goodbye Old Friend: Best Practices for When and How to Replace, Restore, and Retire Food Processing Equipment	
	U.S. Regulatory Update on Food Safety – *Ballroom A-C* Frank Yiannas, U.S. Food & Drug Administration (FDA) and Sandra Eskin, U.S. Department of Agriculture (USDA)						
Monday 1:30 p.m. – 5:15 p.m.	S14 – Getting Floured by *E. coli*: Risk Assessment and Mitigation	S15 – Recent Advances in Phage-Based Systems for Food and Water Analysis	Technical Session 4 – Meat, Poultry and Egg	Technical Session 5 – Water and Sanitation and Hygiene	S16 – Where the Wild Things are: Foraging for Fungi Food Safety	S17 – Making a Big Deal over Small Things: Omics-Based Microbiological Risk Assessment	
	S20 – What Do Fresh-Cut Produce and Low Moisture Foods Processors Have in Common? New Considerations for Environmental Monitoring Programs	S21 – COVID-19 Risk Management Practices in Food Markets: What are the Impacts on Food Safety?			S22 – Food Defense: Proactive Approaches to Risk Mitigation	S23 – Evolving Familiar Tools – Recent Developments and Applications of Risk Assessment and Predictive Modeling in Government and Industry	
TUESDAY, AUGUST 2							
Tuesday 8:30 a.m. – 12:15 p.m.	S29 – Agricultural Water Quality for Produce: Recent Advances, Current Challenges, and Future Opportunities	S30 – Food Safety within Food Security in Africa: The Dilemma between Informal and Formal Markets	Technical Session 6 – Laboratory and Detection Methods	Technical Session 7 – Food Safety Systems, Food Processing Technologies, and Seafood	S31 – Using a HACCP-Mindset to Enable Enhanced Food Traceability	S32 – Rapid Response Research to Support the Food Industry through COVID-19	Poster Session 2 – Antimicrobials, Communication Outreach and Education, Food Processing Technologies, Food Safety Systems, Laboratory and Detection Methods. Retail and Food Service Safety, Sanitation and Hygiene
	RT12 – How Much S.M.A.R.T.E.R. Have Agricultural Water Quality Metrics Become?	S36 – The Silent Pandemic: The Emergence and Spread of Antimicrobial Resistance in Food Systems in the Middle East and North Africa (MENA) Region			S37 – Look Around, You Have All It Takes to Make Your Food Safe!	S38 – Managing Your *Salmonella* Risk: How Investing in Early Detection and Quantitation Methods Can Protect Your Poultry Business?	
	IAFP Business Meeting – *310 - 311*						
Tuesday 1:30 p.m. – 5:15 p.m.	S43 – Cyber Attacks on the Food Industry: Virtual Threats with Real Consequences	S44 – Adjunct Antimicrobial Treatments – What are They, and How Do They Fit into a Sanitation Program?	Technical Session 8 – Produce	Technical Session 9 – Communication Outreach and Education	S45 – The Use of QMRA for Food Safety Interventions in Low and Middle-Income Countries	S46 – Whole Genome Sequencing: Challenging and Defining Foodborne Pathogen Species, Risk, and Virulence	
	RT16 – Public-Private Data Sharing: A New Opportunity for Risk-Based Decision Making in Food Safety	S49 – Advances in Pedagogy, Modality, and Accessibility for Virtual Food Safety Education			S50 – Recent Advances in Control of *Bacillus* spp. – A Pathogen of Renewed Concern	RT17 – Acidified Foods: Addressing Challenges in Product Classification Beyond Food Safety. What Role Do Water, Syrups, and Other Low Water Activity Ingredients Play?	
WEDNESDAY, AUGUST 3							
Wednesday 8:30 a.m. – 12:15 p.m.	S53 – Surrounded on All Sides: A Dive into the Unseen Microbiomes of Residential and Industrial Built Environments and Food Safety Implications	S54 – Increasing Access to and Cultivating Diversity within Food Safety Spaces	Technical Session 11 – Food Toxicology, Food Chemical Hazards and Food Allergens, and Dairy	Technical Session 12 – Low-water Activity Foods and General Microbiology	S55 – New Advances in *Alicyclobacillus* Detection, Differentiation, and Control	S56 – Infusing Cannabis Edibles with the Time-Tested Science of Food Safety	Poster Session 3 – Beverages and Acid/Acidified Foods, Food Chemical Hazards and Food Allergens, Food Toxicology, General Microbiology, Laboratory and Detection Methods, Low-water Activity Foods, Microbial Food Spoilage, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiome, Packaging, Seafood
	S59 – Computer Modeling – The Next Step in the Dairy Industry Evolution	RT22 – Understanding and Overcoming Challenges in Helping Underrepresented Minority Audiences Meet the FSMA PSR 112.22(c) Training Requirements			S60 – Life at the Extremes: Fungal Spoilage in Low Water Activity, High Acid, and Thermally Processed Foods and Beverages	S61 – Mixed Methods Approaches to Investigating Microbial Produce Safety Hazards and Mitigation in Hydroponic and Aquaponic Operations	
Wednesday 1:30 p.m. – 3:30 p.m.	S67 – Transmissible Locus of Stress Tolerance (tLST) in Bacteria, a Potential Threat to Food Safety and Public Health	Get-Connected Market: Connecting IAFP Professionals on Food Safety in Africa	Technical Session 13 – Antimicrobials	S68 – Foodborne Pathogens and Vulnerable Populations: Protecting and Educating the Immunocompromised	S69 – Spoiled Seafood? Advancements in Detecting Decomposition	S70 – Mind the Gap: The Role of the Frontline Voice in Food Safety Culture Improvement	
Wednesday 4:00 p.m. – 4:45 p.m.	**John H. Silliker Lecture** – Ballroom B - C The Power of Diverse Perspectives for Effective Food Safety Management – Katherine M.J. Swanson, KMJ Swanson Food Safety, Inc.						

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(as of 7/1/22)

General Sessions

Lucia Anelich, Ph.D.
Anelich Consulting
Pretoria, South Africa

SUNDAY, JULY 31

OPENING SESSION
IVAN PARKIN LECTURE
6:00 P.M. – 7:30 P.M.
OUT OF AFRICA

Join us for the IAFP 2022 Opening Session, where various awards will be presented, including the Fellow Award, the Travel Awards, and the Student Travel Scholarship. Enjoy the Cheese and Wine Reception in the Exhibit Hall following the Opening Session.

MONDAY, AUGUST 1

U.S. REGULATORY UPDATE ON FOOD SAFETY
12:30 P.M. – 1:30 P.M.

Don't miss the U.S. Regulatory Update on Food Safety. Experts from the U.S. Food and Drug Administration and the U.S. Dept. of Agriculture will provide the latest updates and changes within their respective agency, followed by a Q&A with attendees.

Frank Yiannas, MPH
Deputy Commissioner
Food Policy and Response
U.S. Food & Drug Administration (FDA)
Silver Spring, MD, USA

Sandra Eskin
Deputy Under Secretary for Food Safety
U.S. Department of Agriculture
Washington, D.C., USA

Katherine M.J. Swanson, Ph.D.
Retired, KMJ Swanson Food Safety Inc.
Mendota Heights, Minnesota, USA

WEDNESDAY, AUGUST 3

CLOSING SESSION
JOHN H. SILLIKER LECTURE
4:00 P.M. – 4:45 P.M.
THE POWER OF DIVERSE PERSPECTIVES FOR EFFECTIVE FOOD SAFETY MANAGEMENT

The John H. Silliker Lecture closes out IAFP 2022's four days of lectures, sessions, and presentations. Plan to attend IAFP's Awards Banquet this evening to honor and recognize food safety professionals for their outstanding efforts during the past year.

Exhibit Hall Events and Information

CHEESE AND WINE RECEPTION

SUNDAY, JULY 31 7:30 p.m. – 9:30 p.m.

Sponsored by MERCK Animal Health

Cheese donated by LAND O'LAKES, INC.

EXHIBIT HALL BREAKS

MONDAY, AUGUST 1

10:00 a.m. Coffee Break

Sponsored by DEIBEL LABORATORIES

3:00 p.m. Coffee Break

TUESDAY, AUGUST 2

10:00 a.m. Coffee Break

3:00 p.m. Coffee Break

EXHIBIT HALL LUNCH

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

TUESDAY, AUGUST 2 11:45 a.m. – 1:30 p.m.

EXHIBIT HALL RECEPTIONS

MONDAY, AUGUST 1 5:15 p.m. – 6:15 p.m.

TUESDAY, AUGUST 2 5:15 p.m. – 6:15 p.m.

EXHIBIT HOURS

SUNDAY, JULY 31
7:30 p.m. – 9:30 p.m.

MONDAY, AUGUST 1
10:00 a.m. – 6:15 p.m.

TUESDAY, AUGUST 2
10:00 a.m. – 6:15 p.m.

EXHIBITOR SHOWCASE

SCHEDULE OF PRESENTATIONS

MONDAY, AUGUST 1

MORNING

10:15 a.m. Bayer – Protect Your Reputation with Digital Pest Management

11:30 a.m. Mérieux NutriSciences – Ask the Science Center Pro

AFTERNOON

12:00 p.m. FlexXray – The Value of Incorporating Foreign Material Inspection Into Routine Food Safety, HACCP and Sustainability Programs

12:30 p.m. BIOLYPH – Room Temperature Stable Reagents in Less Than 3 Weeks

3:00 p.m. 3M – Food Microbiological Methods: Advances in Technology to Enhance Efficiency

4:30 p.m. T&D – Temperature Data Loggers and Your Food Safety Plan

TUESDAY, AUGUST 2

MORNING

10:15 a.m. 3M – Implementing a Risk-Based Approach to Food Safety

11:30 a.m. Aptar CSP Technologies – Leveraging Active Material Science Innovations to Mitigate Foodborne Illness and Reduce Fresh Product Spoilage

AFTERNOON

12:00 p.m. BSI – Mythbusting the Role of Standards

The Exhibitor Showcase is located in the Exhibit Hall.

Committee and PDG Meetings

TIMES	MEETING	ROOM
SUNDAY, JULY 31, 2022		
7:30 AM – 9:00 AM	Affiliate Council	*315–316*
8:00 AM – 10:00 AM	Food Hygiene and Sanitation PDG	*301–303*
8:00 AM – 5:00 PM	Committee on Control of Foodborne Illness	*338*
8:30 AM – 10:30 AM	International Food Protection Issues PDG	*335*
9:00 AM – 10:30 AM	Constitution and Bylaws Committee	*331*
9:00 AM – 10:30 AM	Membership Committee	*329*
9:00 AM – 11:00 AM	Advanced Molecular Analytics PDG	*304–305*
9:00 AM – 11:00 AM	Data Management and Analytics PDG	*328*
9:00 AM – 11:00 AM	Food Safety Assessment, Audit and Inspection PDG	*334*
9:00 AM – 11:00 AM	HACCP Utilization and Food Safety Systems PDG	*310–311*
9:00 AM – 12:00 PM	Meat and Poultry Safety and Quality PDG	*406*
10:00 AM – 12:00 PM	Food Chemical Hazards and Food Allergy PDG	*336*
10:00 AM – 12:00 PM	*JFP* Management Committee	*330*
10:00 AM – 12:00 PM	Pre-Harvest Food Safety PDG	*319–321*
10:00 AM – 12:00 PM	Retail and Food Service PDG	*317–318*
10:15 AM – 12:00 PM	Food Defense PDG	*301–303*
10:45 AM – 12:15 PM	3-A Committee on Sanitary Procedures PDG	*329*
11:00 AM – 12:00 PM	Student PDG	*335*
12:00 PM – 1:30 PM	Student Luncheon	*Ballroom B–C*
1:00 PM – 2:00 PM	Past Presidents' Committee	*331*
1:00 PM – 3:00 PM	Animal and Pet Food Safety PDG	*328*
1:00 PM – 3:00 PM	Beverages and Acid/Acidifed Foods PDG	*310–311*
1:00 PM – 3:00 PM	Dairy Quality and Safety PDG	*317–318*
1:00 PM – 3:00 PM	Food Fraud PDG	*304–305*
1:00 PM – 3:00 PM	Food Law PDG	*336*
1:00 PM – 3:00 PM	Fruit and Vegetable Safety and Quality PDG	*406*
1:00 PM – 3:00 PM	Low Water Activity Foods PDG	*319–321*
1:00 PM – 3:00 PM	Plant-Based Alternative Products Quality and Food Safety PDG	*301–303*
1:00 PM – 3:00 PM	Seafood Safety and Quality PDG	*334*
1:00 PM – 3:00 PM	Viral and Parasitic Foodborne Disease PDG	*335*
1:00 PM – 3:00 PM	Webinar Committee	*329*
2:00 PM – 4:00 PM	*FPT* Management Committee	*330*
3:15 PM – 5:15 PM	Applied Laboratory Methods PDG	*319–321*
3:15 PM – 5:15 PM	Developing Food Safety Professionals PDG	*304–305*
3:15 PM – 5:15 PM	Diversity, Equity and Inclusion Council	*335*
3:15 PM – 5:15 PM	Food Safety Culture PDG	*406*
3:15 PM – 5:15 PM	Food Packaging PDG	*334*
3:15 PM – 5:15 PM	Food Safety Education PDG	*317–318*
3:15 PM – 5:15 PM	Microbial Modelling and Risk Analysis PDG	*301–303*
3:15 PM – 5:15 PM	Sanitary Equipment and Facility Design PDG	*310–311*
3:15 PM – 5:15 PM	Water Safety and Quality PDG	*336*
3:30 PM – 4:30 PM	Nominating Committee	*331*
WEDNESDAY, AUGUST 3, 2022		
7:30 AM – 8:30 AM	Foundation Committee	*320*

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Student Activities

JOB FAIR

Attention Job Seekers and Employers!

Job announcements will be posted at the Student PDG booth.

STUDENT PDG MEETING

SUNDAY, JULY 31

11:00 a.m. – 12:00 p.m.

Room 335

STUDENT LUNCHEON

SUNDAY, JULY 31

12:00 p.m. – 1:30 p.m.

Ballroom B – C

STUDENT MIXER

TUESDAY, AUGUST 2

7:00 p.m. – 9:00 p.m.

Westin – Westmoreland Room

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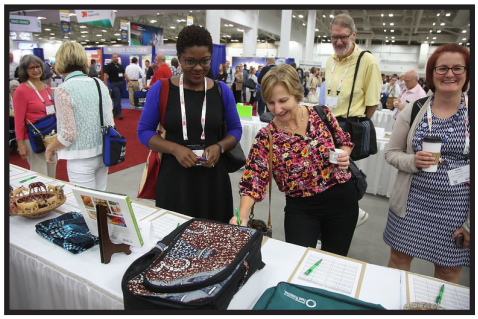

Your participation in the IAFP Foundation Silent Auction is a fun way to support the IAFP Foundation.

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

- Ivan Parkin Lecture
- John H. Silliker Lecture (Funded through a contribution from Mérieux NutriSciences, Inc.)
- Student Travel Scholarships for Annual Meeting
- Student Travel Scholarships for the European Symposium
- Travel Awards for Health or Agricultural Department Employees in North America
- Travel Awards for Food Safety Professionals in a Country with a Developing Economy
- Travel Support for Speakers at Global IAFP Conferences
- Developing Scientist Student Competition
- Undergraduate Student Competition

Silent Auction Hours

Sunday, July 31	7:30 p.m. – 9:30 p.m.
Monday, August 1	10:00 a.m. – 6:00 p.m.
Tuesday, August 2	10:00 a.m. – 3:30 p.m.

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

Located in the Exhibit Hall

All proceeds benefit the IAFP Foundation

IAFP FOUNDATION

OPENING SESSION

SUNDAY, JULY 31

David L. Lawrence Convention Center _____ 6:00 p.m.
Ballroom A–C

WELCOME TO IAFP 2022

Ruth Petran, IAFP President

IAFP FOUNDATION

Gary Acuff, Foundation Chairperson

DAVE THENO SAFETY FELLOWSHIP AWARD

Presented by: Ben Chapman, STOP Foodborne Illness
Kiley Doherty

PEANUT PROUD STUDENT SCHOLARSHIP

Presented by: Darlene Cowart, Peanut Proud
Arpita Aditya

TRAVEL AWARDS

Presented by: Ruth Petran, IAFP President; and Gary Acuff, Foundation Chairperson

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HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES IN NORTH AMERICA

Jessica Danzeisen
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FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY

Badroonesha Aumjaud
Rine Reuben
Neetu Taneja

FELLOW AWARD

Presented by: Ruth Petran, IAFP President; and Michelle Danyluk, IAFP President-Elect

David Blomquist
James Dickson
Lynn McMullen
George-John Nychas
Manan Sharma

THE IVAN PARKIN LECTURE

Introduction: Michelle Danyluk, IAFP President-Elect

Out of Africa
Lucia Anelich, Ph.D.

CLOSING COMMENTS

Ruth Petran, IAFP President

CHEESE AND WINE RECEPTION

Sponsored by: MERCK Animal Health
Cheese provided by: LAND O'LAKES, INC.

IAFP Exhibit Hall, David L. Lawrence Convention Center.....7:30 p.m. – 9:30 p.m.

IVAN PARKIN LECTURE

SUNDAY, JULY 31
OPENING SESSION
6:00 P.M. – 7:30 P.M.

OUT OF AFRICA

LUCIA ANELICH, PH.D.

Anelich Consulting
Pretoria, South Africa

SUNDAY, JULY 31
OPENING SESSION
6:00 P.M. – 7:30 P.M.

Dr. Lucia Anelich established Anelich Consulting, a successful national and international food safety consulting and training business in South Africa, in 2011. Dr. Anelich was previously with the Consumer Goods Council of South Africa, beginning in 2005, where she established a food safety body for the food industry, a first for the country. She spent the prior 25 years at the Tshwane University of Technology in South Africa, later becoming Head of the Department of Biotechnology and Food Technology and Associate Professor, the first female head of such a department in South Africa.

Dr. Anelich was instrumental in providing guidance to the food industry on *Listeria monocytogenes* during the 2018 listeriosis outbreak and on SARS-CoV-2 related to food safety during the COVID-19 pandemic, beginning in January 2020. On both these and other food safety-related topics, she is interviewed regularly by print media, radio, and TV. She spoke at several national and international events on the listeriosis outbreak and on SARS-CoV-2 and the safety of food and food packaging.

In July 2020, through the President of South Africa's office, Dr. Anelich was appointed to be part of a group of 80 authors to develop a Country Report on the Impact of Government's Decisions on the COVID-19 Pandemic. As part of this group, she convened and co-authored the chapter on "Agriculture and the Food Supply Chain."

In September 2021, Dr. Anelich received the prestigious SAAFoST President's Award as its first female recipient for her significant contributions toward advancing Food Safety Technology for the provision of safe and wholesome food.

Dr. Anelich's career achievements include serving as Adjunct Professor at Central University of Technology in South Africa; membership in ICMSF since 2005; Past President of the South African Association for Food Science and Technology (SAAFoST); member of the African Union Advisory Group developing a Food Safety Strategy for the African continent and the newly-developed AU Food Safety Authority; first South African Chair of the Scientific Council of IUFoST; Fellow of the International Academy of Food Science and Technology; technical expert and consultant for FAO and UNIDO; and co-editor of two books on food safety. Dr. Anelich serves on several committees related to regulations and standards development in the food safety space. She has authored/co-authored numerous publications and book chapters and presented more than 180 talks nationally and internationally.

An IAFP Member since 2012, Dr. Anelich served on the organizing committee of the African Continental Association for Food Protection's inaugural ACAFP Food Safety Conference for Africa, held virtually 10–11 November 2021.

IVAN PARKIN LECTURE ABSTRACT

OUT OF AFRICA

LUCIA ANELICH, PH.D.

Anelich Consulting
Pretoria, South Africa

Africa is the world's second largest and second most populous continent, after Asia in both cases. At about 30.3 million square kilometres, including adjacent islands, it covers 6% of Earth's total surface area and 20% of its land area. At approximately 1.37 billion people, it represents about 16% of the world's population. Most importantly, Africa consists of 55 countries, each with its own traditions, languages, culture and sovereignty. So, while there are regional similarities, Africa is not one country.

Africa is a continent of contrasts, and there is no better way of showing this when it comes to food. South Africa (SA) is the most developed country on the continent, with approximately 37,000 commercial farms with a strong food export culture, a formal food retail system, which accounts for about 60% of food sold in SA, while the informal sector accounts for the remaining 40%. It contains one of the largest fresh produce markets in the world, selling more than 1 million tons of fruit and vegetables per year. Even so, out of 59 million people, there is great disparity in wealth, with 12 million living below the poverty line – this figure is of course exacerbated by the COVID-19 pandemic with 2.2 million people who lost their jobs in the first year of the pandemic, with only some small recovery thereafter.

Furthermore, SA has a cohort of excellent scientists in many fields, not least of which is the capacity to provide excellent quality research on COVID-19, as was seen throughout the pandemic, but more particularly, in December 2021, when SA scientists identified the Omicron variant. It is also a member of the BRICS group, with Brazil, Russia, India and China being the other four.

On the other end of the scale, however, Africa contains 33 out of the 46 least developed countries in the world.

Is Africa respected in its own right by the developed world or is Africa expendable? Is food safety only for those who can afford it? Where does food safety rank in Africa alongside two other major diseases that swallow up scarce resources, i.e., malaria and HIV/AIDS? How does one balance the need to consume any food to fill one's belly with the concept of food safety? Does the continued practice of training food professionals in Africa through various international projects achieve practical and implementable outcomes that make a difference at the political level, where it counts?

This presentation will explore these hard, yet necessary questions as well as the weaknesses and disparities that the COVID-19 pandemic has highlighted. It is guaranteed to be controversial.

FOUNDATION CONTRIBUTORS

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Thank you to the following organizations for your generous contributions:

Eurofins

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

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MONDAY, AUGUST 1

ALL DAY

8:30 a.m. – 6:15 p.m. — **Poster Session 1**
Exhibit Hall
Animal and Pet Food Safety, Dairy, Data Management and Analytics, Epidemiology, Food Defense, Food Law and Regulation, Meat, Poultry and Eggs, Pre-Harvest Food Safety, Produce, Viruses and Parasites, Water

P1-01 through P1-85 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P1-86 through P1-190 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

MORNING

8:30 a.m. – 12:15 p.m.

Room 310-311	T1	Technical Session 1 – Modeling and Risk Assessment
Room 401-402	T2	Technical Session 2 – Molecular Analytics, Genomics and Microbiome
Room 403-404	T3	Technical Session 3 – Developing Scientist Student Competition Finalists

8:30 a.m. – 10:00 a.m.

Ballroom A-C	RT1	How Relevant is Finished Product Testing for Pathogens to Public Health Outcomes?
Room 315-316	RT2	Flour and Shiga Toxin-Producing *Escherichia coli* (STEC): What Can be Done to Prevent Outbreaks?
Room 301-303	S1	*Salmonella* in Poultry: Issues and Solutions
Room 304-305	S2	Recent Developments in Applications of Predictive Tools for Meat and Poultry Products
Room 317-318	S3	Challenges and Strategies in Implementing Food Safety Management Systems in Multinational Companies
Room 319	S4	Implementation of HACCP-Based Egg Product Inspection
Room 405	S5	Non-Destructive Superior Sampling
Room 406	S6	Food Safety by Design

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

10:45 a.m. – 12:15 p.m.

Room 317-318	S7	Addressing the Global Threat of Antimicrobial Resistance Using One Health Approach
Room 319	S8	Continuing the Comanagement Conversation: Establishing a Conceptual Framework for Understanding Trade-Offs and Synergies between Food Safety and Conservation Aims
Room 405	S9	Infectious or Not Infectious? Advances in Virus Quantification and Translation to Health Risk
Room 406	S10	Goodbye Old Friend: Best Practices for When and How to Replace, Restore, and Retire Food Processing Equipment
Ballroom A-C	RT3	COVID-19: What Have We Learned to Make Our Food Systems More Resilient in the Future?
Room 301-303	RT4	The Intersection of Adjacent and Nearby Land Use and Produce Safety
Room 304-305	RT5	Practical Approaches to Enhance Food Safety Culture: Shared Learnings from a Dairy Industry-Wide Program
Room 315-316	RT6	What Do We Know and Still Not Know about Pathogen Control in Low-Moisture Foods?

12:00 p.m. – 1:30 p.m. — **Lunch Available in the Exhibit Hall**

AFTERNOON

12:30 p.m. – 1:30 p.m.

Ballroom A-C		U.S. Regulatory Update on Food Safety

1:30 p.m. – 5:15 p.m.

Room 401-402	T4	Technical Session 4 – Meat, Poultry and Eggs
Room 403-404	T5	Technical Session 5 – Water and Sanitation and Hygiene

1:30 p.m. – 3:00 p.m.

Room 301-303	S11	Clean-Label Antimicrobial Innovations and Applications
Room 310-311	S12	Using Consumer Research to Inform Labeling Policy for Food Products
Room 315-316	S13	Metagenomics: Where Do Viruses and Parasites Fit in?
Room 317-318	S14	Getting Floured by *E. coli*: Risk Assessment and Mitigation
Room 319	S15	Recent Advances in Phage-Based Systems for Food and Water Analysis
Room 405	S16	Where the Wild Things are: Foraging for Fungi Food Safety
Room 406	S17	Making a Big Deal over Small Things: Omics-Based Microbiological Risk Assessment
Ballroom A-C	RT7	Recent State and Local Outbreak Investigations

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

3:45 p.m. – 5:15 p.m.

Room 301-303	S18	Advances in Antimicrobial Technologies and Their Translation into Industry Practices
Room 315-316	S19	Parasites of Global Public Health Relevance
Room 317-318	S20	What Do Fresh-Cut Produce and Low-Moisture Food Processors Have in Common? New Considerations for Environmental Monitoring Programs
Room 319	S21	COVID-19 Risk Management Practices in Food Markets: What are the Impacts on Food Safety?
Room 405	S22	Food Defense: Proactive Approaches to Risk Mitigation
Room 406	S23	Evolving Familiar Tools – Recent Developments and Applications of Risk Assessment and Predictive Modeling in Government and Industry
Ballroom A-C	RT8	Hold the Phone! The Role of Celebrity Chefs and Influencers in Food Safety Messaging
Room 304-305	RT9	Can We Rely on Third Party Auditors to Assess Whether a Supplier's Microbial and/or Chemical Test Methods are the Right Fit for the Food Commodity?
310-311	T10	Back to Front and Front to Back: How to Manage out Toxins and Naturally Occurring Hazards throughout the Supply Chain

EVENING OPTIONS

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

AFFILIATE MEETINGS

5:30 p.m. – 6:30 p.m — **African Continental Association for Food Protection Meeting, *Room 317–318***

5:30 p.m. – 6:30 p.m — **China Association for Food Protection and Chinese Association for Food Protection in North America Meeting, *Room 304–305***

5:30 p.m. – 6:30 p.m. — **Indian Association for Food Protection in North America Meeting, *Room 315–316***

IAFP 2022 PROGRAM

EXHIBITOR SHOWCASE PRESENTATIONS

MORNING

10:15 a.m. Bayer – Protect Your Reputation with Digital Pest Management

11:30 a.m. Mérieux NutriSciences – Ask the Science Center Pro

MONDAY, AUGUST 1

Posters will be on display 8:30 a.m. – 6:15 p.m.
(See details beginning on page 67)

S1 *Salmonella* in Poultry: Issues and Solutions

Room 301-303

Organizer: Francisco Diez-Gonzalez
Convenors: Francisco Diez-Gonzalez, Manpreet Singh

Meat and Poultry Safety and Quality
Epidemiology
Retail and Foodservice

8:30 USDA-FSIS Update: Reducing *Salmonella* in Poultry
JANELL KAUSE, U.S. Department of Agriculture, Food Safety and Inspection Service, Washington, D.C., USA

9:00 Utilizing Serotype and Quantification Data to Address *Salmonella* in Poultry
SHANICE KROMBEEN, Pilgrim's Pride Corp, Westminster, SC, USA

9:30 *Salmonella* Enteritidis and Breeder Supply Chain
XIANGYU DENG, University of Georgia, Center for Food Safety, Griffin, GA, USA; ELENA BEHNKE, National Poultry Improvement Plan (NPIP) – USDA APHIS, Conyers, GA, USA; Alberto Torres-Rodrigues, Cobb-Vantress, Siloam Springs, AR, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S2 Recent Developments in Applications of Predictive Tools for Meat and Poultry Products

Room 304-305

Organizers and Convenors: Cheng-An Hwang, Dennis Seman

Meat and Poultry Safety and Quality
Microbial Modelling and Risk Analysis

8:30 Predictive Microbiology in the Food Industry: What It Takes to Make It Widely Used
DENNIS SEMAN, DL Seman Consulting, Cottage Grove, WI, USA

9:00 Use of Predictive Models in the Context of Product and Performance Criteria for Safe Product Formulations
PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

9:30 Integrated Modeling Tools for Dynamic Prediction and Control of Bacterial Growth and Survival for Meat and Poultry Processing
LIHAN HUANG, USDA Agricultural Research Service, Wyndmoor, PA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S3 Challenges and Strategies in Implementing Food Safety Management Systems in Multi-national Companies

Room 317-318

Organizers: Elizabeth Palmer, Loralyn Ledenbach
Convenor: Elizabeth Palmer

HACCP Utilization and Food Safety Systems
Food Safety Culture

8:30 Promoting Global Programs Alignment as a Multinational Supplier
VICKIE LEWANDOWSKI, Barry Callebaut, Amery, WI, USA

9:00 Standardizing Approaches to Food Safety Program Documentation
LORALYN LEDENBACH, Kraft Heinz Company, Glenview, IL, USA

9:30 Implementing a Food Safety Management System in a Multinational Food Service Company
TOM FORD, Compass Group, Charlotte, NC, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S4 Implementation of HACCP-Based Egg Product Inspection

Room 319

Organizer: Erika Stapp-Kamotani
Convenors: Erika Stapp-Kamotani, Jose Gabiola
Sponsored by IAFP Foundation

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

8:30 HACCP for Egg Products – HACCP Alliance Perspective
KERRI B. GEHRING, Texas A&M University, College Station, TX, USA

9:00 HACCP for Egg Products – Industry Perspective 2
KIMBERLY K. RICE, Rose Acre Farms, Seymour, IN, USA

9:30 HACCP for Egg Products – Industry Group Perspective
OSCAR GARRISON, United Egg Producers, Johns Creek, GA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

Check the IAFP App for changes to the Program.

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

S5 Non-Destructive Superior Sampling

Room 405

Organizers: Garth Hoffmann, J. David Legan
Convenor: Thomas Taylor

Meat and Poultry Safety and Quality
Fruit and Vegetable Safety and Quality

8:30 Benefits of Aggregated Sampling – Removing the Knives from Meat Testing
TERRANCE M. ARTHUR, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

9:00 Analytical Benefits of Aggregated Sampling
DANIEL R. DEMARCO, Eurofins Microbiology Laboratories, Louisville, KY, USA

9:30 The Promise of Aggregated Sampling for Produce –
ERIC WILHELMSEN, FREMONTA, Fremont, CA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S6 Food Safety by Design

Room 406

Organizers: Debra Smith, Dimitri Tavarnarakis
Convenor: Mark Morgan

Sanitary Equipment and Facility Design
Food Safety Assessment, Audit and Inspection
Food Hygiene and Sanitation

8:30 Hygienic Design Remains a Major Cause of Incidents Globally
GALE PRINCE, SAGE Food Safety Consultants, LLC., Cincinnati, OH, USA

9:00 Hygienic Design Benchmark Requirements of GFSI and Integration into Auditing Programs
RICK HEIMAN, 3-A, McLean, VA, USA; DEBRA L SMITH, Vikan, Swindon, United Kingdom and JOHN HOLAH, Holchem/Kersia, FS&PH, Bury, United Kingdom

9:30 Hygienic Design and the Value to Business
DIMITRI TAVERNARAKIS, Mondelez International, Heraklio, Greece

10:00 Break – Refreshments Available in the Exhibit Hall

RT1 How Relevant is Finished Product Testing for Pathogens to Public Health Outcomes?

Ballroom A-C

Organizers: Brienna Larrick, Kathleen Glass, Pamela Wilger
Convenor: Brienna Larrick

HACCP Utilization and Food Safety Systems
Food Safety Assessment, Audit and Inspection
Low-Water Activity Foods

8:30 ROY BETTS, Science Fellow, Campden BRI, Chipping Campden, United Kingdom
HEATHER CARLETON, Centers for Disease Control and Prevention, Atlanta, GA, USA
MARTIN DUPLESSIS, Food Directorate, Health Canada, Ottawa, ON, Canada
BENJAMIN WARREN, U.S. Food and Drug Administration, Silver Spring, MD, USA
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA

10:00 Break – Refreshments Available in the Exhibit Hall

RT2 Flour and Shiga Toxin-Producing *Escherichia coli* (STEC): What Can be Done to Prevent Outbreaks?

Room 315-316

Organizers: Aparna Tatavarthy, Nathan Anderson, Mark Moorman
Convenor: Mark Moorman

Low-Water Activity Foods

8:30 YAOHUA FENG, Purdue University, West Lafayette, IN, USA
LINDA J. HARRIS, Department of Food Science, University of California, Davis, Davis, CA, USA
STEPHANIE P. NGUYEN, Conagra Brands, Omaha, NE, USA
KALIRAMESH SILIVERU, Kansas State University, Manhattan, KS, USA
KELLY A. STEVENS, General Mills, Minneapolis, MN, USA
APARNA TATAVARTHY, U.S. Food and Drug Administration, College Park, MD, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S7 Addressing the Global Threat of Antimicrobial Resistance Using One Health Approach

Room 317-318

Organizers: Salina Parveen, Mohammad Islam
Convenors: Salina Parveen, Nur Hasan
Sponsored by IAFP Foundation

Epidemiology
Pre-Harvest Food Safety
Water Safety and Quality

10:45 One Health Surveillance of AMR: Evidence from a Developing Country
MOHAMMAD A. ISLAM, Paul G. Allen School for Global Health, Washington State University, Pullman, WA, USA

11:05 Molecular Approaches to AMR Surveillance in the Food Chain
NUR A. HASAN, EzBiome Inc., Gaithersburg, MD, USA

11:25 Antibiotic-Resistance Containment in Bangladesh: Gulf between Policy and Implementation
MOHAMMED ABDUS SAMAD, Bangladesh Livestock Research Institute, Savar, Bangladesh

11:50 FDA's One Health Approach to Mitigating Antimicrobial-Resistance Risks
RUBY SINGH, U.S. Food and Drug Administration, Derwood, MD, USA

12:15 Lunch Available in the Exhibit Hall

Check the IAFP App for changes to the Program.

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

S8 Continuing the Comanagement Conversation: Establishing a Conceptual Framework for Understanding Trade-Offs and Synergies between Food Safety and Conservation Aims

Room 319

Organizers: Angela Marie C. Ferelli, Laura Strawn, Daniel Weller
Convenors: Angela Marie C. Ferelli, Claire M. Murphy

Sponsored by IAFP Foundation

Pre-Harvest Food Safety
Water Safety and Quality
Fruit and Vegetable Safety and Quality

10:45 Farm-Level Challenges in Managing Non-Crop Vegetation for Both Food Safety and Conservation Aims: Results from a Nation-Wide Grower Survey
PATRICK BAUR, University of Rhode Island, Kingston, RI, USA

11:15 Modelling Concomitant Food Safety and Water Quality Impacts of Non-Crop Vegetation Removal and Maintenance in Northeastern Watersheds
DANIEL WELLER, Department of Statistics and Computational Biology, University of Rochester Medical Center, Rochester, NY, USA

11:45 Quantifying the Economic Trade-Offs between Food Safety and Conservation Practices in Managing Non-Crop Vegetation for U.S. Produce Growers
AARON ADALJA, Cornell University, Ithaca, NY, USA

12:15 Lunch Available in the Exhibit Hall

S9 Infectious or Not Infectious? Advances in Virus Quantification and Translation to Health Risk

Room 405

Organizers and Convenors: Kristen Gibson, Efstathia (Efi) Papafragkou

Sponsored by IAFP Foundation

Viral and Parasitic Foodborne Disease
Applied Laboratory Methods

10:45 Emerging Culture Methods to Determine Virus Infectivity and Application in Foods and Associated Environments
SAMANTHA WALES, U.S. Food and Drug Administration, Laurel, MD, USA

11:15 Can Indicators Provide Information on Virus Infectivity? Current Viral Indicators and Relationship to Infectious Virus
JAMES LOWTHER, UK National Reference Laboratory for Foodborne Viruses, Dorset, United Kingdom

11:45 Alternative Methods to Quantify Viable Viruses in Naturally Contaminated Samples
SUSANA GUIX ARNAU, Dr., Barcelona, Spain

12:15 Lunch Available in the Exhibit Hall

S10 Goodbye Old Friend: Best Practices for When and How to Replace, Restore, and Retire Food Processing Equipment

Room 406

Organizers: Angela Anandappa, Jeffrey Kornacki
Convenor: Angela Anandappa

Sanitary Equipment and Facility Design
Food Hygiene and Sanitation
Food Safety Assessment, Audit and Inspection

10:45 50 Years of Food Processing Equipment Design
JOHN BUTTS, Safety by Design, Eagen, MN, USA

11:15 Hygienic Zoning for Assessing Equipment Hygiene
JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA

11:45 Case Studies in Equipment Modification, Reconditioning, and Re-Assessment
APRIL BISHOP, TreeHouse Foods, Oak Brook, IL, USA

12:15 Lunch Available in the Exhibit Hall

RT3 COVID-19: What Have We Learned to Make Our Food Systems More Resilient in the Future?

Ballroom A-C

Organizers: Lucia Anelich, Leon Gorris
Convenor: Anett Winkler, Marcel Zwietering

International Food Protection Issues
Communication, Outreach and Education

10:45 LUCIA ANELICH, Anelich Consulting, Pretoria, South Africa
PETER BEN-EMBAREK, WHO, Geneva, Switzerland
SUCHART CHAVEN, PepsiCo, Valhalla, NY, USA
JEFFREY FARBER, Food Safety Consultant, Toronto, ON, Canada
JORGE PINTO FERREIRA, FAO-Food and Agriculture Organization, Rome, Italy

12:15 Lunch Available in the Exhibit Hall

RT4 The Intersection of Adjacent and Nearby Land Use and Produce Safety

Room 301-303

Organizers: Mark Moorman, Karen Killinger
Convenor: Mark Moorman

Pre-Harvest Food Safety
Fruit and Vegetable Safety and Quality
International Food Protection Issues

10:45 REBECCA BELL, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA
ASHLEY EISENBEISER, The Food Industry Association, Arlington, VA, USA
KAREN KILLINGER, U.S. Food and Drug Administration, College Park, MD, USA
NATALIE KROUT-GREENBERG, California Department of Food and Agriculture, Sacramento, CA, USA
ROGER NOONAN, New England Farmers Union, Turner Falls, MA, USA
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA

12:15 Lunch Available in the Exhibit Hall

RT5 Practical Approaches to Enhance Food Safety Culture: Shared Learnings from a Dairy Industry-Wide Program

Room 304-305

Organizers: Chad Galer, Timothy Stubbs
Convenor: Timothy Stubbs

Dairy Quality and Safety
Food Safety Culture

10:45 JONATHAN FISCHER, HP Hood LLC, Wilmington, MA, USA
LONE JESPERSEN, Cultivate, Hauterive, Switzerland
KAREN K. MCCARTY, Agropur, Inc., Le Sueur, MN, USA
BRAD SUHLING, Prairie Farms Dairy, St. Louis, MO, USA
JEREMY TRAVIS, Hilmar Cheese & Ingredients, Hilmar, CA, USA

12:15 Lunch Available in the Exhibit Hall

RT6 What Do We Know and Still Not Know about Pathogen Control in Low-Moisture Foods?

Room 315-316

Organizers: Isabel Walls, David Legan
Convenors: Isabel Walls, David Legan

Low-Water Activity Foods
Meat and Poultry Safety and Quality
Fruit and Vegetable Safety and Quality

10:45 NATHAN M. ANDERSON, U.S. Food and Drug Administration, Bedford Park, IL, USA
BECKY DOUGLAS, Tree Top, Inc., Selah, WA, USA
BRADLEY MARKS, Michigan State University, East Lansing, MI, USA
MERYL SILVERMAN, USDA/FSIS, Washington, D.C., USA
RICO SUHALIM, PepsiCo, Plano, TX, USA
JUMING TANG, Washington State University, Pullman, WA, USA

12:15 Lunch Available in the Exhibit Hall

T1 Technical Session 1 – Modeling and Risk Assessment

Room 310-311

Convenors: Yifang Chen and Paula Herald

T1-01 8:30 Data-Driven Discovery of Novel Polymer Coatings for Biofilm Reduction
YIFAN CHENG, Zhihao Feng, Alexandra Khlyustova, Aasim Wani, Trevor Franklin, Jeffrey Varner, Andrew Hook, Rong Yang, Cornell University, Ithaca, NY, USA

T1-02 8:45 Predicting Food Spoilage Using Rapid and Non-Invasive Near Infrared Spectroscopy in Synchronicity with Machine Learning Models
AFTAB SIDDIQUE, Charles B. Herron, Mary Durstock, Alvaro Sanz-Saez, Laura J. Garner, Amit Morey, Auburn University, Auburn, AL, USA

T1-03 9:00 Prediction of Population Behavior of *Listeria monocytogenes* in Food Using Machine Learning and Combase Database
Satoko Hiura, Shigenobu Koseki, KENTO KOYAMA, Hokkaido University, Sapporo, Japan

T1-04 9:15 Foodborne Salmonellosis Outbreak Severity Prediction Based on Genetic and Meteorological Trends Using Machine Learning
SHRADDHA KARANTH, Jitu Patel, Adel Shirmohammadi, Abani K. Pradhan, University of Maryland, College Park, MD, USA

T1-05 9:30 Using *E. coli* Population to Predict Foodborne Pathogens in Pastured Poultry Farms
XINRAN XU, Michael Rothrock, Abhinav Mishra, Govindaraj Dev Kumar, University of Georgia, Athens, GA, USA

T1-06 9:45 Changes in *Salmonella* Occurrence Since the Introduction of Performance Standards for Chicken Parts
MICHAEL WILLIAMS, Neal Golden, Eric Ebel, Gurinder Saini, Epiphanie Nyirabahizi, Nelson Clinch, U.S. Department of Agriculture – Food Safety Inspection Service, Fort Collins, CO, USA

10:00 Break – Refreshments Available in the Exhibit Hall

T1-07 10:45 Quantitative Microbial Risk Assessment (QMRA) of Salmonellosis from Chicken and Pork Salad Consumption in Cambodia
Chea Rortana, Sinh Dang, Hung Nguyen-Viet, Johanna Lindahl, DELIA GRACE, Fred Unger, Sothyra Tum, Chhay Ty, Sofia Boqvist, Natural Resource Institute, University of Greenwich, Kent, United Kingdom

T1-08 11:00 Quantitative Risk Assessment of *Salmonella* in Ground
ALI STRICKLAND, Craig Hedberg, Fernando Sampedro, University of Minnesota, Minneapolis, MN, USA

T1-09 11:15 Improving Dairy Powder Sampling Plans for Detecting Pathogens through Simulation Analysis
MINHO KIM, Matthew J. Stasiewicz, University of Illinois Urbana-Champaign, Urbana, IL, USA

T1-10 11:30 Evaluating Product Testing Combined with Other Strategies for Reducing Risks from Pre-Harvest Contamination of *E. coli* O157:H7 on Generic Leafy-Green Produce Using a Farm-to-Facility Simulation
GUSTAVO REYES, Jiaying Wu, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Champaign, IL, USA

T1-11 11:45 Quantifying Free Chlorine Inactivation Efficacy of *Escherichia coli* O157:H7 during Produce Wash
PARTHASARATHY SRINIVASAN, Mohammadreza Abnavi, Chandra Kothapalli, Daniel S. Munther, Cleveland State University, Cleveland, OH, USA

T1-12 12:00 Insights into the Relevance of *Bacillus cytotoxicus* as a Foodborne Pathogen
Johanna Burtscher, Danai Etter, Michael Biggel, Janine Schlaepfer, SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

12:15 Lunch Available in the Exhibit Hall

T2 Technical Session 2 – Molecular Analytics, Genomics and Microbiome

Room 401-402

Convenors: Magaly Toro and Xingchen Zhao

T2-01 8:30 Using Whole Genome Sequencing Data to Inform Food Safety Actions
MERYL SILVERMAN, Kristina E. Barlow, Carrie Clark, Amber Pasko, USDA/FSIS, Washington, D.C., USA

T2-02 8:45 Detection of Diverse *Salmonella* Serovars in Various Food Matrices Using Quasimetagenomics
CAMERON PARSONS, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

T2-03 9:00 Targeted High Throughput Quasimetagenomic Sequencing Using Hybridization Capture for Detection of *Salmonella* in an Outbreak Investigation
PADMINI RAMACHANDRAN, Mark Mammel, Elizabeth Reed, Jie Zheng, Rebecca Bell, Andrea Ottesen, Christopher Grim, Amanda Windsor, U.S. Food and Drug Administration, Laurel, MD, USA

T2-04 9:15 Predictive Analytics within Food Safety: Source Attribution of *Salmonella* Using Whole-Genome Sequence Data and Random Forest
JAMES PETTENGILL, Heather Carleton, Beth Tolar, Rebecca Lindsey, Michael Batz, Michael Bazaco, Jess Chen, Eleanor Click, Andrea Cote, Zhaohui Cui, Ana Lauer, Mustafa Simmons, Berhanu Tameru, Glenn Tillman, Beau B. Bruce, Erica Rose, U.S. Food and Drug Administration, CFSAN, College Park, MD, USA

T2-05 9:30 Identifying Sub-Populations in *Salmonella* Serovars from Genomic Virulence Markers
GAVIN FENSKE, Regis Pouillot, Jane Pouzou, Solenne Costard, Daniel Taylor, Francisco J. Zagmutt, EpiX Analytics, Fort Collins, CO, USA

T2-06 9:45 Diversity and Phylogeny of Selected Nontyphoidal *Salmonella* Serovars Associated with Meat and Poultry
RUIXI CHEN, Linghuan Yang, Magdalena Pajor, Renato Orsi, Martin Wiedmann, Cornell University, Ithaca, NY, USA

10:00 Break - Refreshments Available in the Exhibit Hall

T2-07 10:45 Contribution of Plasmid Diversity to the Genomic Plasticity of *Salmonella enterica*
OPEYEMI U. LAWAL, Lawrence D. Goodridge, University of Guelph, Guelph, ON, Canada

T2-08 11:00 QAC Efflux Genes are Common in *Listeria monocytogenes* Isolates from U.S. Food Processing Environments and are Variably Associated with Clonal Complex, Isolation Source, and Persistence
DEVIN DAESCHEL, James Pettengill, Yu Wang, Yi Chen, Marc Allard, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

T2-09 11:15 The Association between Pastured Poultry-Related Microbiomes and *Campylobacter* Presence
XINRAN XU, Michael Rothrock, Abhinav Mishra, Govindaraj Dev Kumar, University of Georgia, Athens, GA, USA

T2-10 Withdrawn

T2-11 11:45 Validation of the Single-Use Glove Microbiome Shotgun WGS Metagenomic Analysis
BARRY S. MICHAELS, Ryan McLaughlin, Jenna Brooks-McLaughlin, Stephen Ardagh, B. Michaels Group Inc., Palatka, FL, USA

T2-12 12:00 Tracking the Source of *Bacillus thuringiensis* in Spinach and Tomato
XINGCHEN ZHAO, Marc Hendriks, Athanasios Zervas, Andreja Rajkovic, Niels Bohse Hendriksen, Leo van Overbeek, Mieke Uyttendaele, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

12:15 Lunch Available in the Exhibit Hall

T3 Technical Session 3 – Developing Scientist Student Competition Finalists

Room 403-404

Convenor: Alvin Lee

T3-01 8:30 Efficacy of Acetic Acid Dissolved in Oil with Water-in-Oil Emulsions Against Desiccated Cells of *Salmonella* Enteritidis and *Listeria monocytogenes*
SHIHYU CHUANG, Lynne McLandsborough, University of Massachusetts, Amherst, MA, USA

T3-02 8:45 AI-Enabled Biosensing for Rapid Identification of Pathogens in Food and Agricultural Water
JIYOON YI, Nicharee Wisuthiphaet, Pranav Raja, Nitin Nitin, Mason Earles, University of California, Davis, Davis, CA, USA

T3-03 9:00 Characterization and Detection of Finfish Parvalbumin
XINGYI JIANG, Yaqi Zhao, Qinchun Rao, Florida State University, Tallahassee, FL, USA

T3-04 9:15 Combined Effect of Conjugated Linoleic Acid over Converting *Lactobacillus casei* and Berry Phenolic Extracts Against Colonization of *Campylobacter* in Chicken
ZAJEBA TABASHSUM, Zabdiel Alvarado-Martinez, Arpita Aditya, Sanjaya Mijar, Mengfei Peng, Debabrata Biswas, University of Maryland, College Park, MD, USA

T3-05 9:30 Norovirus Detection in Fresh Produce, Water, and Hand Rinses: Potential for Environmental Transmission during Production?
JULIA S. SOBOLIK, Jessica Prince-Guerra, Lee-Ann Jaykus, Norma L. Heredia, Santos Garcia, Juan S. Leon, Emory University, Atlanta, GA, USA

T3-06 9:45 Comparison of Genetic Information on Stress-Resistant and -Sensitive *Listeria monocytogenes* Isolated from Foods, Humans, and Animal-Related Sources
HYUNHEE HONG, Seung-Min Yang, Eiseul Kim, Hyun Jung Kim, Michael Rothrock, Hae-Yeong Kim, Sang-Do Ha, Si Hong Park, Oregon State University, Corvallis, OR, USA

10:00 Break - Refreshments Available in the Exhibit Hall

T3-07 10:45 *Salmonella* Surveillance in United States Broiler Production, 2016–2021
AMY SICELOFF, Doug Waltman, Nikki W. Shariat, University of Georgia, Athens, GA, USA

T3-08 11:00 Capture and Concentration of Human Noroviruses in Foods and Environmental Samples by Engineered Bacterial Strains
ANAND R. SOORNEEDI, Matthew D. Moore, University of Massachusetts, Amherst, Amherst, MA, USA

T3-09 11:15 Detection of the Viable but Non-Culturable State (VBNC of *Listeria monocytogenes* and *Listeria innocua* Induced by Biocide Stress Using Raman Microspectroscopy
SYLVAIN TRIGUEROS, Tommy Dedole, Thomas Brauge, Véronique Rebuffel, Sophie Morales, Pierre R. Marcoux, Graziella Midelet, University Grenoble Alpes, CEA, LETI, Grenoble, France

T3-10 11:30 Characterization of Very High Pressure (550 MPa) Resistant Bacterial Spores
ROSA HEYDENREICH, Alessia Delbrück, Christina Peternell, Alexander Mathys, ETH Zurich, Institute of Food, Nutrition and Health, Sustainable Food Processing Laboratory, Zurich, Switzerland

T3-11 11:45 Development of a Strain-Specific *Shigella* Isolation Method from Model Food Commodity Using Genomically Predicted Antimicrobial-Resistance Traits
LANG YAO, Catherine Carrillo, Alex Wong, Burton W. Blais, Canadian Food Inspection Agency, Ottawa, ON, Canada

T3-12 12:00 Genotypic and Phenotypic Characterization of *Salmonella enterica* and *Listeria monocytogenes* Recovered from Alternative Irrigation Water on the Eastern Shore of Maryland
CHANELLE L. ACHEAMFOUR, Fawzy Hashem, Amy R. Sapkota, Manan Sharma, Shirley A Micallef, Eric McLamore, Michelle D. Danyluk, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

12:15 Lunch Available in the Exhibit Hall

Check the IAFP App for changes to the Program.

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

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U.S. REGULATORY UPDATE ON FOOD SAFETY

MONDAY, AUGUST 1

12:30 P.M. – 1:30 P.M.
BALLROOM A–C

Don't miss the U.S. Regulatory Update on Food Safety. Experts from the U.S. Food and Drug Administration and the U.S. Department of Agriculture will provide the latest updates and changes within their respective agencies.

FRANK YIANNAS, MPH
Deputy Commissioner,
Food Policy and Response
U.S. Food & Drug
Administration
Silver Spring, MD, USA

Frank Yiannas, MPH, is the Deputy Commissioner for Food Policy and Response, a position he assumed in December 2018.

Mr. Yiannas is the principal advisor to the U.S. FDA Commissioner in the development and execution of policies related to food safety, including implementation of the landmark FDA Food Safety Modernization Act (FSMA), helping reduce food safety risks and achieve high rates of compliance with FDA food safety standards. He previously served in leadership roles with Walmart and the Walt Disney Company.

SANDRA ESKIN
Deputy Under Secretary
for Food Safety
U.S. Department of Agriculture
Washington, D.C., USA

Sandra Eskin was appointed Deputy Under Secretary for Food Safety in March 2021. In this role, Mrs. Eskin leads the Office of Food Safety at the U.S. Department of Agriculture, overseeing the Food Safety and Inspection Service (FSIS), which has regulatory oversight for ensuring that meat, poultry and egg products are safe, wholesome and accurately labeled.

Prior to joining the USDA, Mrs. Eskin was the Project Director for Food Safety at The Pew Charitable Trusts in Washington, D.C., a position she held since November 2009. She also served as the Deputy Director of the Produce Safety Project (PSP), a Pew-funded initiative at Georgetown University from 2008–2009. While at PSP, she was a senior scholar with the O'Neill Institute for National and Global Health Law at Georgetown University.

Mrs. Eskin spent nearly 20 years as a public-policy consultant to numerous consumer advocacy and public-interest organizations, providing strategic and policy advice on a broad range of consumer-protection issues, in particular food and drug safety, labeling, and advertising. She has served as a member of multiple federal advisory committees related to consumer information on prescription drugs, meat and poultry safety, and foodborne illness surveillance. During her career, she has written numerous reports and articles on food-safety topics. Mrs. Eskin received her J.D. from UC Hastings College of the Law, and her B.A. from Brown University.

EXHIBITOR SHOWCASE PRESENTATIONS

AFTERNOON

12:00 p.m. FlexXray – The Value of Incorporating Foreign Material Inspection Into Routine Food Safety, HACCP and Sustainability Programs

12:30 p.m. BIOLYPH – Room Temperature Stable Reagents in Less Than 3 Weeks

3:00 p.m. 3M – Food Microbiological Methods: Advances in Technology to Enhance Efficiency

4:30 p.m. T&D – Temperature Data Loggers and Your Food

MONDAY AFTERNOON AUGUST 1

12:30 p.m. – 1:30 p.m.

U.S. Regulatory Update on Food Safety

Ballroom A-C

12:30 Update from U.S. Department of Agriculture
SANDRA ESKIN, U.S. Department of Agriculture, Washington, D.C., USA

12:45 Update from U.S. Food and Drug Administration
FRANK YIANNAS, U.S. Food & Drug Administration Silver Spring, MD, USA

1:00 Audience Questions & Answers

S11 Clean-Label Antimicrobial Innovations and Applications

Room 301-303

Organizers and Convenors: Faith Critzer, Joshua Gurtler

Sponsored by IAFP Foundation

Beverages and Acid/Acidified Foods
Meat and Poultry Safety and Quality
Low-Water Activity Foods

1:30 Antimicrobial Microemulsions of Essential Oils
FAITH CRITZER, University of Georgia, Athens, GA, USA

2:00 Thermally-Assisted Antimicrobial Synergism
JOSHUA B. GURTLER, U.S. Department of Agriculture – ARS, Wyndmoor, PA, USA

2:30 Update on the Use of Bacteriocins in Foods
DES FIELD, University College Cork Ireland, Cork, Ireland

3:00 Break - Refreshments Available in the Exhibit Hall

S12 Using Consumer Research to Inform Labeling Policy for Food Products

Room 310-311

Organizers: Sheri Cates, Lisa Shelley
Convenors: Wendy Mihm, Sean Leighton

Food Safety Education
Communication, Outreach and Education

1:30 Consumer Research on Modernization of USDA's Safe-Handling Instructions Label for Raw Meat and Poultry Products
AARON LAVALLEE, U.S. Department of Agriculture – FSIS, Washington, D.C., USA

2:00 Consumer Research on the Handling and Labeling of Not-Ready-to-Eat Frozen Foods
LISA A. SHELLEY, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

2:30 Consumer Handling and Labeling of Frozen Foods – Where the Industry is Going
DONNA M. GARREN, American Frozen Food Institute, Woodbridge, VA, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S13 Metagenomics: Where Do Viruses and Parasites Fit in?

Room 315-316

Organizers: Pushpinder Litt, Stephanie Brown
Convenors: Jacquelina Woods, Pushpinder Litt, Stephanie Brown

Sponsored by IAFP Foundation

Advanced Molecular Analytics
Viral and Parasitic Foodborne Disease
Applied Laboratory Methods

1:30 Using Metagenomics Approach to Study Foodborne Viruses
SOIZICK F. LE GUYADER, Ifremer, Laboratoire de Microbiologie, Nantes, France

2:00 Utilization of Bioinformatics Tools: From Building Pipelines to Metadata Analysis
BAS OUDE MUNNINK, Erasmus University Medical Center, Rotterdam, MD, The Netherlands

2:30 *Cyclospora cayetanensis* Detection and Application of Metagenomics for Characterization of Microbial Community Composition in Irrigation Water
MAURICIO DURIGAN, U.S. Food and Drug Administration – CFSAN, Office of Applied Research and Safety Assessment, Laurel, MD, USA; Susan R. Leonard, Office of Applied Research and Safety Assessment, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, Laurel, MD, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S14 Getting Floured by *E. coli*: Risk Assessment and Mitigation

Room 317-318
Secondary Sponsor: IAFPNA
Organizers: Govindaraj Dev Kumar, Abhinav Mishra
Convenors: Govindaraj Dev Kumar, Dumitru Macarisin, Hari Niwas Mishra

Low-Water Activity Foods
Microbial Modelling and Risk Analysis

1:30 STEC in Wheat Flour and Strategies for Its Mitigation
FRANCISCO DIEZ-GONZALEZ, Center for Food Safety, University of Georgia, Griffin, GA, USA

2:00 Survival Dynamics of STEC in Cake Batters
ABHINAV MISHRA, University of Georgia, Athens, GA, USA

2:30 Improving Inactivation Models and Validation Methods for Pasteurization Processes of Low-Water Activity Food Products
NATHAN M. ANDERSON, U.S. Food and Drug Administration, Bedford Park, IL, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S15 Recent Advances in Phage-Based Systems for Food and Water Analysis

Room 319
Organizers: Joey Talbert, Sam Nugen
Convenor: Sam Nugen
Advanced Molecular Analytics
Applied Laboratory Methods

1:30 The Application of Binding Reporters to Enhance the Sensitivity of Reporter Phage Assays
JOEY TALBERT, Iowa State University, Ames, IA, USA

2:00 Bacteriophage Engineering for the Rapid Separation and Concentration of Bacteria
SAM NUGEN, Cornell University, Ithaca, NY, USA

2:30 Development of CRISPR-Equipped Engineered Phages for Bacteria Detection
JUHONG CHEN, Virginia Tech, Blacksburg, VA, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S16 Where the Wild Things are: Foraging for Fungi Food Safety

Room 405
Organizers: Minh Duong, Katie Overbey, Sarah Jones
Convenors: Margaret Kirchner, Lily Yang
Pre-Harvest Food Safety
Fruit and Vegetable Safety and Quality

1:30 Mushroom Safety and Regulations: A Case Study of Enoki and *L. monocytogenes*
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA

2:00 Foraging and the Cottage Mushroom Industry
TBD

2:30 Mushroom Production: Industrial Growth
LUKE F. LABORDE, Penn State University, University Park, PA, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S17 Making a Big Deal over Small Things: Omics-Based Microbiological Risk Assessment

Room 406
Organizer: Kang Zhou
Convenors: Luca Simone Cocolin, Kang Zhou
Sponsored by Food and Agriculture Organization of the United Nations (FAO) and the IAFP Foundation

Microbial Modelling and Risk Analysis
Food Safety Assessment, Audit and Inspection

1:30 Integration of Multi-Omics as a Challenge for MRA in Food
LUCA SIMONE COCOLIN, Department of Agriculture, Forest and Food Sciences, University of Turin, Grugliasco, Italy

2:00 An Omics-Based Approach for Risk Assessment on AMR
LAWRENCE D. GOODRIDGE, University of Guelph, Guelph, ON, Canada

2:30 Improving Food Safety Using Whole Genome Sequencing and Machine Learning
PIMLAPAS LEEKITCHAROENPHON, National Food Institute, Denmark Technical University, Lyngby, Denmark

3:00 Break - Refreshments Available in the Exhibit Hall

RT7 Recent State and Local Outbreak Investigations

Ballroom A-C
Organizers and Convenors: Brenda Morris, Steven Mandernach
Sponsored by AFDO - Association of Food and Drug Officials

Epidemiology
Food Safety Assessment, Audit and Inspection

1:30 BEVIN DURANT FIDLER, Pennsylvania Department of Agriculture, Harrisburg, PA, USA
KELSEY HOLLOMAN, Virginia Department of Health, Richmond, VA, USA
CHANDRA KANWAT, South Carolina Department of Health & Environmental Control, Columbia, SC, USA
RANDY J. TREADWELL, Association of Food & Drug Officials, York, PA, USA
MUGDHA GOLWALKAR, Tennessee Department of Health, Nashville, TN, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S18 Advances in Antimicrobial Technologies and Their Translation into Industry Practices

Room 301-303
Organizers and Convenors: Sofia Feng, Matthew Moore, Katie Overbey

Meat and Poultry Safety and Quality
Food Hygiene and Sanitation
Developing Food Safety Professionals

3:45 Biological Antimicrobial Case Study: Phage Applications in Animal Meat Proteins: Chicken and Pork, an Industry Approach
SIROJ POKHAREL, California Polytechnic State University, San Luis Obispo, CA, USA

MONDAY PM

Check the IAFP App for changes to the Program.

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

4:15 Novel Advances in Antimicrobial Chemistries
MARC E. POLLACK, ZECO-Member of The Vincit Group, Chattanooga, TN, USA

4:45 Nanotechnology to the Rescue: Novel Antimicrobial Platforms and Materials for Food Safety
PHILLIP DEMOKRITOU, Rutgers University, Piscataway, NJ, USA

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

S19 Parasites of Global Public Health Relevance

Room 315-316

Organizers: Jorge Gomez, Ynes Ortega
Convenors: Maria Luna, Ynes Ortega
Sponsored by IAFP Foundation

International Food Protection Issues
Viral and Parasitic Foodborne Disease Epidemiology

3:45 Foodborne Toxoplasmosis: A Global Challenge for Food Safety
JORGE GOMEZ, Universidad del Quindio, Armenia, Colombia

4:15 *Cyclospora* and *Salmonella* in Fresh Produce and the Implications in International Trade
LUCERO LEYVA, Benemerita Universidad de Puebla, Puebla, PU, Mexico

4:45 Cysticercosis: Advances and Challenges Working with an Illness Affecting Humans Since Antiquity
MANUELA VERASTEGUI, Universidad Peruana Cayetano Heredia, Lima, Peru

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

S20 What Do Fresh-Cut Produce and Low-Moisture Food Processors Have in Common? New Considerations for Environmental Monitoring Programs

Room 317-318

Organizers and Convenors: Claire Zoellner, Kristen Gibson, Sarah Jones

Fruit and Vegetable Safety and Quality
Low-Water Activity Foods

3:45 What Do We Know? *Salmonella* and *Listeria* Ecology and Factors That Impact Detection during Environmental Monitoring
SARAH L. JONES, University of Arkansas, Fayetteville, AR, USA; Leslie Hintz, U.S. Food and Drug Administration, College Park, MD, USA

4:15 Are We Looking for the Right Microorganisms? Low-Moisture Foods and Environmental Monitoring Outlooks into More Risk-Based Approaches Supported by Growing Evidence
ANETT WINKLER, Cargill, Inc., Unterschleißheim, Germany

4:45 Where Do We Go from Here? How Fresh-Cut Processors are Adapting Environmental Monitoring Programs to Changing Risks and Buyer Requirements
SURESH DE COSTA, Lipman Family Farms, Immokalee, FL, USA

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

S21 COVID-19 Risk Management Practices in Food Markets: What are the Impacts on Food Safety?

Room 319

Organizers: Elisabetta Lambertini, Caroline Smith DeWaal
Convenor: Caroline Smith DeWaal

International Food Protection Issues
Retail and Foodservice
Communication, Outreach and Education

3:45 Keeping Food Markets Working: How Changes in Consumer and Vendor Behaviors to Manage COVID-19 Risk in Traditional Food Markets in Low- and Middle-Income Countries Can Affect Food Safety
ELISABETTA LAMBERTINI, GAIN - Global Alliance for Improved Nutrition, Rockville, MD, USA

4:15 COVID-19's Influence on Health and Hand Hygiene Practices at Farmers' Markets
LESTER SCHONBERGER, Virginia Tech, Blacksburg, VA, USA

4:45 Trends in Consumers' Risk Perceptions and Food-Related Hygiene Practices in Arab Countries during the COVID-19 Pandemic
EWEN TODD, Ewen Todd Consulting LLC, Okemos, MI, USA

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

S22 Food Defense: Proactive Approaches to Risk Mitigation

Room 405

Organizers: Jessica Cox, Debbie Joseph, Carol Brevett
Convenor: Jessica Cox
Sponsored by The Department of Homeland Security

Food Defense
Food Chemical Hazards and Food Allergy
Food Fraud

3:45 The National Security Memorandum – Strengthening the Security and Resilience of United States Food and Agriculture across State, Local, Tribal, Territorial and Private Sector Partners
KEVIN MORGAN, Department of Homeland Security, Countering Weapons of Mass Destruction – Food, Agriculture, and Veterinary Defense Division, Washington, D.C., USA

4:15 Protecting U.S. Agriculture at Border Crossings
KEVIN HARRIGER, DHS CBP, Washington, D.C., USA

4:45 Food Supply Chains – How Would These be Affected by African Swine Fever?
Caroline R.M. Kennedy, MITRE, McLean, VA

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

S23 Evolving Familiar Tools – Recent Developments and Applications of Risk Assessment and Predictive Modeling in Government and Industry

Room 406

Organizer: Yuhuan Chen
Convenors: Marcel Zwietering, Sofia Santillana Farakos

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

3:45 An Update on the USDA – Pathogen Modeling Program and Combase: Tools for Evaluating Interventions
VIJAY JUNEJA, USDA-ARS-ERRC, Wyndmoor, PA, USA

4:15 Developing Predictive Tools to Support Safe Design and Operations in the Food Industry
JOHN L. BASSETT, Danone SA, Palaiseau, France

4:45 FDA-iRisk 4.2: Food Safety Modeling Tool for Better Decision-Making and Collaboration
YUHUAN CHEN, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, College Park, MD, USA

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

RT8 Hold the Phone! The Role of Celebrity Chefs and Influencers in Food Safety Messaging

Ballroom A-C

Organizers: Sheri Cates, Rebecca Goulter, Wendy Mihm, Ellen Thomas Shumaker
Convenor: Ellen Shumaker

Food Safety]Education
Communication, Outreach and Education

3:45 NICOLE L. ARNOLD, East Carolina University, Greenville, NC, USA
ELLEN W EVANS, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom
WENDY MIHM, U.S. Department of Agriculture – FSIS, Washington, D.C., USA
CHEETIE KUMAR, Garland, Raleigh, NC, USA
KATIEROSE MCCULLOUGH, North American Meat Institute, Washington, D.C., USA
BRITANNY SAUNIER, Partnership for Food Safety Education, Arlington, VA, USA

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

RT9 Can We Rely on Third Party Auditors to Assess Whether a Supplier's Microbial and/or Chemical Test Methods are the Right Fit for the Food Commodity?

Room 304-305

Organizer and Convenor: Rocelle Grabarek

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

3:45 APRIL BISHOP, TreeHouse Foods, Oak Brook, IL, USA
SANDRA JOHNSON, SGS North America, Oklahoma City, OK, USA
JEFFREY L. LUCAS, Mérieux NutriSciences, Luling, TX, USA
MOLLY F. MILLS, Kerry, Beloit, WI, USA
HOWARD O. POPOOLA, The Kroger Co., Cincinnati, OH, USA
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA

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

RT10 Back to Front and Front to Back: How to Manage out Toxins and Naturally Occurring Hazards throughout the Supply Chain

Room 310-311

Organizer and Convenor: Angela Anandappa

Food Chemical Hazards and Food Allergy
HACCP Utilization and Food Safety Systems
International Food Protection Issues

3:45 ANGELA ANANDAPPA, Alliance for Advancing Sanitation, Glenview, IL, USA
HOSAHALLI S. RAMASWAMY, McGill University, Ste-Anne-de-Bellevue, QC, Canada
KANTHA SHELKE, Corvus Blue LLC/Johns Hopkins University, Chicago, IL, USA
ERIK WESTBLOM, Provision Analytics, Calgary, AB, Canada

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

T4 Technical Session 4 – Meat, Poultry and Eggs

Room 401-402

Convenors: Nitin Dhowlaghar, April Englishbey

T4-01 1:30 Sustainable Packaging for Meat Products: Fermentation Can Help!
Jenny Triplett, Rachel Adams, Juergen Schwing, VERONIQUE ZULIANI, CHR. HANSEN, Arpajon, France

T4-02 1:45 Characterization and Isolation of Lactic Acid Bacteria Probiotic Candidates from Fermented Meats
ELVINA PARLINDUNGAN, Gabriele A Lugli, Marco Ventura, Douwe van Sinderen, Jennifer Mahony, School of Microbiology & APC Microbiome Ireland, University College Cork, Cork, Ireland

T4-03 2:00 Prevalence and Antibiotic Resistance of *Salmonella* in Organic and Non-Organic Chickens
ANURADHA PUNCHIHEWAGE DON, Jurgen Schwarz, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

T4-04 2:15 Prevalence of *Salmonella enterica* in Hatchling Chicks Sold in Vermont Agricultural Supply Stores in 2021
KATALIN LARSEN, Jake Bears, Alessandra Michaelides, Katherine Hood, Valorie Vanarsdall, Melissa DeCicco, Andrea Etter, The University of Vermont, Burlington, VT, USA

T4-05 2:30 Evaluating the Effect of Organic Matter on Peroxyacetic Acid Effectiveness Against *Salmonella* spp. in Raw Poultry Parts in Post-Chill Tanks
CARMEN L. CANO, Byron D. Chaves, University of Nebraska-Lincoln, Lincoln, NE, USA

T4-06 2:45 Effect of Combined Action of Nigella sativa and Kefir on the Growth Performance and Health of Broiler Chickens
VISHAL MANJUNATHA, Julian E. Nixon, Greg F. Mathis, Brett Lumpkins, Zeynep B. Guzel-Seydim, Atif Can Seydim, Annel K. Greene, Xiuping Jiang, Clemson University, Clemson, SC, USA

3:00 Break - Refreshments Available in the Exhibit Hall

MONDAY PM

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

T4-07 3:45 Food Safety Verification in the Sampling Program Life Cycle: Raw Pork Sampling for *Salmonella*
SELENA KREMER-CALDWELL, Rebecca Fields, Laine Zipperer, U.S. Department of Agriculture – Food Safety and Inspection Service, Washington, D.C., USA

T4-08 4:00 Analysis of Veal Cecal Samples Collected Under the NARMS Expansion Program during CY2020
CESAR MORALES, Mustafa Simmons, Glenn Tillman, Frankie Beacorn, Uday Dessai, Sheryl L. Shaw, Gamola Fortenberry, U.S. Department of Agriculture – FSIS, Athens, GA, USA

T4-09 4:15 Effect of High Pressure Processing on Shelf Life and Safety of Ground Beef Formulations Containing Different Sodium Levels
CHAOYUE WANG, Philip Strange, Shai Barbut, Sampathkumar Balamurugan, University of Guelph, Guelph, ON, Canada

T4-10 4:30 Identification of Dominant Factors Contributing to Persistence of Third-Generation Cephalosporin-Resistant *Salmonella* at a Beef Cattle Feedyard
JOHN SCHMIDT, Sarah Murray, Aaron Dickey, Tommy Wheeler, Dayna Harhay, Terrance M. Arthur, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

T4-11 4:45 Utilizing *Salmonella* Dynamics between Beef Cattle and the Feedlot Environment to Determine Effective *Salmonella* Mitigation Strategies
COLETTE NICKODEM, Keri Norman, Texas A&M University-CVMBS, College Station, TX, USA

T4-12 5:00 Evaluating Droplet Digital PCR (ddPCR) as a Culture Independent Confirmation Method for Shiga Toxin Producing *E. coli* (STEC) in Routine Beef Microbiological Samples
ALEX BRANDT, Season (Yicheng) Xie, Melody A. Thompson, Caleb Wong, Food Safety Net Services, San Antonio, TX, USA

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

T5 Technical Session 5 – Water and Sanitation and Hygiene

403-404

Convenors: Vijay Juneja, Sujata Sirsat

T5-01 1:30 Differences in the Removal of Chemical and Bacterial Contaminants from Wastewater Effluent Using Sand-Based Filters with Zerovalent Iron Versus Biochar
SUHANA CHATTOPADHYAY, Linyan Zhu, Oluwasegun Akanbi, Steven Lobo, Leena Malayil, Emmanuel Mongodin, Amir Sapkota, Pei Chiu, Amy R. Sapkota, University of Maryland, College Park, MD, USA

T5-02 1:45 Factors Affecting the Recovery of Low Levels and Isolation of *Salmonella enterica* from Surface Water: A Multi-Laboratory Evaluation of Methods
AUTUMN KRAFT, Seongyun Kim, Betty McConn, Alison Franklin, Abasiofiok (Mark) Ibekwe, Jonathan Frye, Lari Hiott, Lisa Durso, James Wells, Laura Boczek, Jay Garland, Claudine Kabera, Patrick McDermott, Andrea Ottesen, Jie Zheng, Cheryl East, Kimberly L. Cook, Manan Sharma, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

T5-03 2:00 Use of Bulk Refillable Dispensers for Alcohol-Based Hand Sanitizers Can Lead to Alcohol Evaporation and Loss of Antimicrobial Efficacy
CHIP S. MANUEL, Mary Czaplicki, Jessica Williams, James Arbogast, GOJO Industries, Inc., Akron, OH, USA

T5-04 2:15 Ready-to-Eat Meat Plant Characteristics Associated with Food Safety Deficiencies during Regulatory Compliance Audits, Ontario, Canada
JIIN JUNG, Fatih Sekercioglu, Ian Young, Ryerson University, Toronto, ON, Canada

T5-05 2:30 Descriptive Analysis of the Most Common Types of Food Safety Infractions at Ready-to-Eat Meat Processing Plants in Ontario, Canada
JIIN JUNG, Ian Young, Fatih Sekercioglu, Ryerson University, Toronto, ON, Canada

T5-06 2:45 Developing In Vitro Dry Surface Biofilm Models of *Salmonella enterica* Serovar Typhimurium, *Listeria monocytogenes*, and *Pseudomonas aeruginosa* in Low-Moisture Conditions to Understand Microbial Interactions
GURPREET K. CHAGGAR, Haley F. Oliver, Purdue University, West Lafayette, IN, USA

3:00 Break - Refreshments Available in the Exhibit Hall

T5-07 3:45 Identification of a Surrogate for *Salmonella* Enteritidis PT 30 in Physical Removal Experiments Relevant to Dry Sanitation
LONG CHEN, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

T5-08 4:00 Patented Organic Peracetic Acid and Hydrogen Peroxide-Based Sanitizing Solution Achieves > 5 Log CFU/g Reduction in *Salmonella* Surrogate *Enterococcus faecium* NRRL B-2354 on Peanuts at an Industrial Scale
ASHLEY CLOUTIER, Jay Pandya, Goze Aliefendioglu, Pooneh Peyvandi, Rebecca Karen Hylton, Amir Hamidi, Fadi Dagher, Agri-Neo Inc., Toronto, ON, Canada

T5-09 4:15 Assessment of *Listeria* Sampling Designs for Improving and Validating *Listeria* Control in Small Food Processing Facilities
SAMANTHA BOLTEN, Timothy Lott, Robert D. Ralyea, Anika Zuber Gianforte, Aljosa Trmcic, Martin Wiedmann, Cornell University, Ithaca, NY, USA

T5-10 4:30 Using Surrogate Viruses to Predict Human Norovirus Surface Sanitizer Efficacy: Time for a Change?
Jeremy P. Faircloth, Chip S. Manuel, James Arbogast, Rebecca M. Goulter, LEE-ANN JAYKUS, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

T5-11 4:45 Efficacy of Cleaning and Sanitation Methods Against *Listeria innocua* on Hard to Clean Food Contact Surfaces in Produce Packinghouses
BLANCA E. RUIZ-LLACSAHUANGA, Alexis Hamilton, Kory Anderson, Faith Critzer, University of Georgia, Athens, GA, USA

T5-12 5:00 TASKI Floor Cleaning Machine Effectively Eliminates *Staphylococcus aureus* Using a Combination of Sanitizers and Surface Cleaning Pads
GERALDINE TEMBO, Xiaobao Li, Peter Teska, Haley F. Oliver, Purdue University, West Lafayette, IN, USA

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

EVENING OPTIONS

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

5:30 p.m. – 6:30 p.m., *Room 317–318*
African Continental Association for Food Protection Meeting

5:30 p.m. – 6:30 p.m., *Room 304–305*
China Association for Food Protection and Chinese Association for Food Protection in North America Meeting

5:30 p.m. – 6:30 p.m., *Room 315–316*
Indian Association for Food Protection in North America Meeting

NOTES

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TUESDAY, AUGUST 2

ALL DAY

8:30 a.m. – 6:15 p.m. — **Poster Session 2**
Exhibit Hall
Antimicrobials, Communication Outreach and Education, Food Processing Technologies, Food Safety Systems, Laboratory and Detection Methods, Retail and Food Service Safety, Sanitation and Hygiene

P2-01 through P2-87 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P2-88 through P2-189 – 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.

Ballroom A-C	S24	Foodborne Disease Outbreak Update
Room 401-402	T6	Technical Session 6 – Laboratory and Detection Methods
Room 403-404	T7	Technical Session 7 – Food Safety Systems, Food Processing Technologies, and Seafood

8:30 a.m. – 10:00 a.m.

Room 301-303	S25	Method and Validation Hurdles to Substantiate Allergen Claims
Room 304-305	S26	Virtual Food Safety Monitoring, Auditing and Artificial Intelligence Applications
Room 310-311	S27	What to Expect When You're Exporting: Using FDA's Export Certification Program
Room 315-316	S28	Data-Driven Sanitation Chemistry Selection: Does It Work Against Biofilms?
Room 317-318	S29	Agricultural Water Quality for Produce: Recent Advances, Current Challenges, and Future Opportunities
Room 319	S30	Food Safety within Food Security in Africa: The Dilemma between Informal and Formal Markets
Room 405	S31	Using a HACCP Mindset to Enable Enhanced Food Traceability
Room 406	S32	Rapid Response Research to Support the Food Industry through COVID-19

10:00 a.m. – 1:45 p.m. — **Break – Refreshments Available in the Exhibit Hall**

10:45 a.m. – 12:15 p.m.

Room 301-303	S33	Global Recommendations on Risk Assessment of Allergens from the Ad Hoc Joint FAO/WHO Expert Consultation
Room 310-311	S34	Persistence of Enteric Viruses in Low-Moisture Environments
Room 315-316	S35	Cleaning: The Perennial Overlooked Step in Sanitation and Vital Importance to Proper Environmental Surface Sanitization and Disinfection
Room 319	S36	The Silent Pandemic: The Emergence and Spread of Antimicrobial Resistance in Food Systems in the Middle East and North Africa (MENA) Region
Room 405	S37	Look Around, You Have All It Takes to Make Your Food Safe!
Room 406	S38	Managing Your *Salmonella* Risk: How Investing in Early Detection and Quantitation Methods Can Protect Your Poultry Business
Room 304-305	RT11	Mission Impossible? Bringing Equivalency to Virtual Audits and Inspections
Room 317-318	RT12	How Much S.M.A.R.T.E.R. Have Agricultural Water Quality Metrics Become?

12:00 p.m. – 1:30 p.m. — **Lunch Available in the Exhibit Hall**

AFTERNOON

12:15 p.m. – 1:15 p.m.

Room 310-311		IAFP Business Meeting

1:30 p.m. – 5:15 p.m.

Room 301-303	S39	Developments in Sample Preparation: Implications in Pathogen Detection When Difficult Matrices are Involved
Room 401-402	T8	Technical Session 8 – Produce
Room 403-404	T9	Technical Session 9 – Communication Outreach and Education

1:30 p.m. – 3:00 p.m.

Ballroom A-C	S40	Novel Foods, Novel Challenges: Food Safety Concerns in Plant-Based and Novel Food Products
Room 304-305	S41	Food Safety Aspects of Controlled Environment Agriculture Systems for Fresh Produce Production: Current Industry Practices and Future Needs
Room 310-311	S42	Not All Acids are Created Equal
Room 317-318	S43	Cyber Attacks on the Food Industry: Virtual Threats with Real Consequences
Room 319	S44	Adjunct Antimicrobial Treatments – What are They and How Do They Fit into a Sanitation Program?
Room 405	S45	The Use of QMRA for Food Safety Interventions in Low- and Middle-Income Countries
Room 406	S46	Whole Genome Sequencing: Challenging and Defining Foodborne Pathogen Species, Risk, and Virulence
Room 315-316	RT13	Identity Matters: Building a More Inclusive Workplace for Women in Food Safety

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

3:45 p.m. – 5:15 p.m.

Room 310-311	RT14	Strengthening Food Safety Education and Research across Programs and Departments in the Universities
Room 315-316	RT15	Life after Graduate School and Beyond Academia
Room 317-318	RT16	Public-Private Data Sharing: A New Opportunity for Risk-Based Decision Making in Food Safety
Room 406	RT17	Acidified Foods: Addressing Challenges in Product Classification Beyond Food Safety. What Role Do Water, Syrups, and Other Low-Water Activity Ingredients Play?
Ballroom A-C	S47	Consequences of Proliferating *Listeria* Species for Detection Methods
Room 304-305	S48	Addressing Urban Agriculture with a One Health Approach to Food Safety Vulnerabilities and Successes
Room 319	S49	Advances in Pedagogy, Modality, and Accessibility for Virtual Food Safety Education
Room 405	S50	Recent Advances in Control of *Bacillus* spp. – A Pathogen of Renewed Concern

EVENING OPTIONS

5:15 p.m. – 6:15 p.m. — **Exhibit Hall Reception**
6:30 p.m. – 7:30 p.m. — **President's Reception (by Invitation), *Westin – Allegheny Ballroom***
7:00 p.m. – 9:00 p.m. — **Student Mixer, *Westin - Westmoreland Room***

AFFILIATE MEETINGS

5:30 p.m. – 6:30 p.m. — **Bangladesh Association for Food Protection in North America, *Room 405***
5:30 p.m. – 6:30 p.m. — **Latin America Group Meeting, *Room 315***
5:30 p.m. – 6:30 p.m. — **Korea Association for Food Protection Meeting, *Room 304–305***
5:30 p.m. – 6:30 p.m. — **Southeast Asia Association for Food Protection Meeting, *Room 317–318***

EXHIBITOR SHOWCASE PRESENTATIONS

MORNING

10:15 a.m. 3M – Implementing a Risk-Based Approach to Food Safety

11:30 a.m. Aptar CSP Technologies – Leveraging Active Material Science Innovations to Mitigate Foodborne Illness and Reduce Fresh Product Spoilage

TUESDAY, AUGUST 2

Posters will be on display 8:30 a.m. – 6:15 p.m.
(See details beginning on page 77)

S24 Foodborne Disease Outbreak Update

Ballroom A-C
Primary Sponsor: Committee on Control of Foodborne Illness
Organizers: Kari Irvin, Laura Gieraltowski, Ewen Todd
Convenors: Kari Irvin, Laura Gieraltowski

Epidemiology
International Food Protection Issues
Fruit and Vegetable Safety and Quality

8:30 International Outbreak Summary
EWEN TODD, Ewen Todd Consulting LLC, Okemos, MI, USA

9:00 Investigation of a Botulism Illnesses and a Suspect Commercially Canned Soup
DOUG NOVEROSKE, U.S. Department of Agriculture-FSIS, Washington, D.C., USA; Reid Schuster, U.S. Department of Agriculture, Athens, GA, USA

9:30 *Salmonella* Typhimurium – Hydroponic Lettuce
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA; Margaret Kirchner, U.S. Food and Drug Administration – CFSAN, Coordinated Outbreak Response and Evaluation Network, College Park, MD, USA

10:00 Break - Refreshments Available in the Exhibit Hall

10:45 Multistate Outbreak of *Salmonella* Oranienburg in Summer 2021
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA; MARVIN R. MITCHELL, JR., U.S. Food and Drug Administration, College Park, MD, USA

11:15 Operational Antecedents Associated with *Clostridium perfringens* Outbreaks in U.S. Retail Food Establishments
BETH WITTRY, CDC, Atlanta, GA, USA

11:45 Fermenting a Place in History: The First Outbreak of *E. coli* O157:H7 Associated with Kimchi in Canada
COURTNEY SMITH, Public Health Agency of Canada, Toronto, ON, Canada

12:15 Lunch Available in the Exhibit Hall

S25 Method and Validation Hurdles to Substantiate Allergen Claims

Room 301-303
Organizers: Joseph Baumert, Tracie Sheehan
Convenor: Steve Taylor

Food Chemical Hazards and Food Allergy
Food Safety Assessment, Audit and Inspection
International Food Protection Issues

8:30 Method Hurdles to Assure Allergen Testing is Adequate to Support Allergen Claims
STEVE TAYLOR, University of Nebraska, Lincoln, NE, USA

9:00 Validation Approaches for Suppliers and Manufactures to Substantiate Allergen Claims
TRACIE SHEEHAN, Mérieux NutriSciences, Chicago, IL, USA

9:30 Regulatory Perspectives
STEFANO LUCCIOLI, Food and Drug Administration, College Park, MD, USA

10:00 Break - Refreshments Available in the Exhibit Hall

S26 Virtual Food Safety Monitoring, Auditing and Artificial Intelligence Applications

Room 304-305
Organizers and Convenors: David Baker, Cindy Jiang

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

8:30 Technologies Enabling Virtual Food Safety Monitoring, Auditing and Use of Artificial Intelligence
WENDY WHITE, Georgia Institute of Technology, Greensboro, GA, USA

9:00 Utilizing Monitoring Systems, Artificial Intelligence, and Technology to Usher in the New Era of Food Safety and Quality
JUDI LAZARO, AIB International, Manhattan, KS, USA

9:30 A Persuasive Case for Investing in New Technology in a Tough Financial Environment; The Use of Blockchain and Other Technologies to Drive Efficiency While Maintaining Virtual Control of Safety, Quality, Traceability, Authenticity, and Carbon Footprint
ROB CHESTER, Ubloquity and Supply Chain In-Sites, London, United Kingdom

10:00 Break - Refreshments Available in the Exhibit Hall

S27 What to Expect When You're Exporting: Using FDA's Export Certification Program

Room 310-311
Organizer and Convenor: Jeffrey Read

International Food Protection Issues
Food Law
Communication, Outreach and Education

8:30 CFIA'S Export Certification Requirements
ALIA BLAIS, Canadian Food Inspection Agency, Ottawa, ON, Canada

9:00 FDA's Export Certification Program
KATHERINE MECK, Food and Drug Administration, College Park, MD, USA

9:30 Industry's Role in Export Certification
PENNY MARSH, Sensient Technologies Corporation, Milwaukee, WI, USA

10:00 Break - Refreshments Available in the Exhibit Hall

S28 Data-Driven Sanitation Chemistry Selection: Does It Work Against Biofilms?

Room 315-316

Organizers: Josie Greve-Peterson, Diane Walker
Convenor: Scott King
Sponsored by IAFP Foundation

Food Hygiene and Sanitation
Dairy Quality and Safety

8:30 Tools in the Toolbox for Assessing Effectiveness of Sanitation Chemistries Against Biofilms
ALBERT PARKER, MSU Center for Biofilm Engineering, Bozeman, MT, USA

9:00 Using Standardized Lab Methods to Support Selection of Sanitation Chemistry in Food Facilities
JAKE WATTS, PSSI Food Safety Solutions, Kieler, WI, USA

9:30 Understanding and Trusting Biofilm Claims of Sanitation Chemistries
DALE GRINSTEAD, Retired – Senior Food Safety Technology Fellow, Highlands, NC, USA

10:00 Break - Refreshments Available in the Exhibit Hall

S29 Agricultural Water Quality for Produce: Recent Advances, Current Challenges, and Future Opportunities

Room 317-318

Organizers: Olivia Haley, Sadhana Ravishankar, Vijay Juneja, Manreet Bhullar
Convenors: Manreet Bhullar, Jeffery Farber, Londa Nwadike

Water Safety and Quality
Fruit and Vegetable Safety and Quality

8:30 FDA Update on Subpart E of the Produce Safety Rule (FSMA Proposed Rule on Agricultural Water)
SAMIR ASSAR, Food and Drug Administration, College Park, MD, USA

9:00 Impact of Environmental Factors and Landscape on Pathogen Contamination in Agricultural Water
DANIEL WELLER, Department of Statistics and Computational Biology, University of Rochester Medical Center, Rochester, NY, USA

9:30 Recent Advances in Agricultural Water Treatments and Future Directions for Research
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA

10:00 Break - Refreshments Available in the Exhibit Hall

S30 Food Safety within Food Security in Africa: The Dilemma between Informal and Formal Markets

Room 319

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

International Food Protection Issues
Developing Food Safety Professionals
Meat and Poultry Safety and Quality

8:30 Food Safety in West Africa: Informal and Formal Markets Challenges
ADEWALE OLUSEGUN OBADINA, Federal University of Agriculture Abeokuta, Abeokuta, Nigeria

9:00 Technical and Socio-Cultural Continuum in Food Management in Informal Markets: An Example from Resource-Poor Settings
KEBEDE AMENU, Addis Ababa University, Bishoftu, Ethiopia

9:30 Foodborne Illnesses Associated with Foods Traded in Informal Markets: A South African Perspective
OLUWAFEMI A. ADEBO, University of Johannesburg, Johannesburg, South Africa

10:00 Break - Refreshments Available in the Exhibit Hall

S31 Using a HACCP-Mindset to Enable Enhanced Food Traceability

Room 405

Organizer and Convenor: Tejas Bhatt

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

8:30 From HACCP to TRACCP – Hazard to Traceability Analysis and Critical Control Points
TEJAS BHATT, Walmart, Rochester, NY, USA

9:00 The Impact of Machine Learning / Data Analysis / AI Application in the Food Safety System
VIKRANT DUTTA, bioMérieux, Inc., Hazelwood, MO, USA

9:30 Moving Traceability from Paper to Practice
JENNIFER C. MCENTIRE, International Fresh Produce Association, Washington, D.C., USA

10:00 Break - Refreshments Available in the Exhibit Hall

S32 Rapid Response Research to Support the Food Industry through COVID-19

Room 406

Organizers: Ellen Shumaker, Don Schaffner, Michelle Danyluk
Convenors: Mark Carter, Benjamin Chapman
Retail and Foodservice
Communication, Outreach and Education

8:30 Environmental Control of SARS-CoV-2 within Food Service Establishments
KRISTEN GIBSON, University of Arkansas, Fayetteville, AR, USA

8:45 A Collaborative Approach to Managing SARS-CoV-2 within the Food Industry: Filling Data Gaps and Impacting Behaviors
BYRON CHAVES, University of Nebraska-Lincoln, Lincoln, NE, USA

9:00 An Integrated Approach to Address COVID-19 Concerns in the Food Supply Chain
REZA OVISSIPOUR, Virginia Tech, Hampton, VA, USA

9:15 Modeling and Training to Enhance Resilience of the U.S. Food System to COVID-19 Labor Shortages
RENATA IVANEK, Cornell University, Ithaca, NY, USA

9:30 SARS-CoV-2 Impact on Meat Production: A Farm to Plate Approach
SAPNA DASS, Texas A&M University, College Station, TX, USA

9:45 Translating SARS-CoV-2 Research into Practical Solutions for the Meat and Poultry Processing Industry
ERIN SCHIRTZINGER, Kansas State University, Manhattan, KS, USA

10:00 Break - Refreshments Available in the Exhibit Hall

S33 Global Recommendations on Risk Assessment of Allergens from the Ad Hoc Joint FAO/WHO Expert Consultation

Room 301-303

Organizers: Tracie Sheehan, Steve Taylor
Convenor: Tracie Sheehan
Sponsored by Food Allergy Research & Resource Program, University of Nebraska

Food Chemical Hazards and Food Allergy, Food Safety
Assessment, Audit and Inspection
International Food Protection Issues

10:45 The Codex Process and Recommendations for Labeling of Priority Allergenic Foods and Ingredients Derived from Those Foods
LAUREN JACKSON, U.S. Food and Drug Administration, Bedford Park, IL, USA

11:15 Recommendations on Establishment of Threshold or Reference Doses
BENJAMIN REMINGTON, Remington Consulting Group, Utrecht, NE, The Netherlands

11:45 Code of Practice on Food Allergen Management from Codex Committee on Food Hygiene
JOSEPH BAUMERT, University of Nebraska-Lincoln, Lincoln, NE, USA

12:15 Lunch Available in the Exhibit Hall

S34 Persistence of Enteric Viruses in Low-Moisture Environments

Room 310-311

Organizer and Convenor: Alvin Lee

Viral and Parasitic Foodborne Disease
Low-Water Activity Foods

10:45 Enteric Viruses and Viral Persistence in Low-Moisture Environments
LEE-ANN JAYKUS, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

11:15 Enteric Virus Survival in Your Favorite Chocolate, Cereal and Nut
TBD

11:45 Inactivation of Enteric Viruses in Low-Moisture Foods
ALVIN LEE, Institute for Food Safety and Health, Bedford Park, IL, USA

12:15 Lunch Available in the Exhibit Hall

S35 Cleaning: The Perennial Overlooked Step in Sanitation and Vital Importance to Proper Environmental Surface Sanitization and Disinfection

Room 315-316

Organizer: Juan Goncalves
Convenor: David Buckley

Food Hygiene and Sanitation
Retail and Foodservice

10:45 Survival and Transmission of Pathogens Due to Improper Cleaning in Food Establishments
ANGELA M. FRASER, Clemson University, Clemson, SC, USA

11:15 Cleaning Products for Food Establishments: Formula Choices, Performance Trade-Offs and Soil Removal Validation
RON MASTERS, Stepan Company, Northfield, IL, USA; CHRISTOPHER LYNCH, Stepan Company, Northfield, IL, USA

11:45 Regulatory Landscape Informing the User of Cleaning Power Requirements from Sanitation Products and Compliance Achievement
BENJAMIN WARREN, U.S. Food and Drug Administration, Silver Spring, MD, USA

12:15 Lunch Available in the Exhibit Hall

S36 The Silent Pandemic: The Emergence and Spread of Antimicrobial Resistance in Food Systems in the Middle East and North Africa (MENA) Region

Room 319

Organizer: Issmat Kassem
Convenor: Bassam Annous

Pre-Harvest Food Safety
International Food Protection Issues

10:45 Assessment of Antibiotic Resistance in Food Matrices and Food Handlers in Qatar
NAHLA ELTAI, Qatar University, Doha, Qatar

11:15 The Emergence of Resistance to Colistin, a Last Resort Antibiotic, in the Food-Environment Continuum in Lebanon
ISSMAT KASSEM, Center for Food Safety, University of Georgia, Griffin, GA, USA

11:45 AMR Global Governance with Emphasis on MENA
JORGE PINTO FERREIRA, FAO-Food and Agriculture Organization, Rome, Italy

12:15 Lunch Available in the Exhibit Hall

S37 Look Around, You Have All It Takes to Make Your Food Safe!

Room 405

Organizer: Carine Nkemngong
Convenors: Carine Nkemngong, Dale Grinstead
Sponsored by Diversey, Inc.

HACCP Utilization and Food Safety Systems
International Food Protection Issues

10:45 An Overview of Food Safety Systems in Bangladesh
SALINA PARVEEN, University of Maryland Eastern Shore, Princess Anne, MD, USA

11:15 Food Safety Management Systems in South Africa
LUCIA ANELICH, Anelich Consulting, Pretoria, South Africa

11:45 Lessons Learned from Food Safety Systems in Developing Countries
HALEY OLIVER, Purdue University, West Lafayette, IN, USA

12:15 Lunch Available in the Exhibit Hall

S38 Managing Your *Salmonella* Risk: How Investing in Early Detection and Quantitation Methods Can Protect Your Poultry Business?

Room 406

Organizers: Panagiotis Skandamis, Daniele Sohier
Convenors: Daniele Sohier, Thomas Taylor
Sponsored by Thermo Fisher Scientific and IAFP Foundation

Meat and Poultry Safety and Quality
Applied Laboratory Methods
Microbial Modelling and Risk Analysis

10:45 How to Unlock Outbreak Investigation with Serotype-Specific Multiplex PCR Method
FRIEDA JORGENSEN, UK Health Security Agency (UKHSA), Salisbury, United Kingdom

11:15 How Quantitative *Salmonella* Tracking Can Benefit to Your Poultry Production Plans
KAREN L. BEERS, Pilgrim's Pride Corporation, Fayetteville, AR, USA

11:45 Assessing Exposure to *Salmonella*-Based on Past, Present and Future Practices: How Science May Inform Risk Management Decisions
PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

12:15 Lunch Available in the Exhibit Hall

RT11 Mission Impossible? Bringing Equivalency to Virtual Audits and Inspections

Room 304-305

Organizers: Wendy White, Kimberly Anderson
Convenor: Wendy White

Food Safety Assessment, Audit and Inspection

10:45 ANDREW CLARKE, Loblaw Companies Ltd., Brampton, ON, Canada
PHILLIP PIERCE, NSF, Key West, FL, USA
ERIC HOFFMAN, FDA, HHS, Washington, D.C., USA
MANDY SEDLAK, Ecolab, Naperville, IL, USA
DAN SOLIS, FDA, HHS, Los Angeles, CA, USA
SHAWN K. STEVENS, Food Industry Counsel, LLC, Random Lake, WI, USA

12:15 Lunch Available in the Exhibit Hall

RT12 How Much S.M.A.R.T.E.R. Have Agricultural Water Quality Metrics Become?

Room 317-318

Organizers: Michelle Smith, Don Stoeckel, Phillip Tocco
Convenors: Don Stoeckel, Will Daniels, Michelle Danyluk

Water Safety and Quality
Fruit and Vegetable Safety and Quality
Food Safety Assessment, Audit and Inspection

10:45 ELIZABETH BIHN, Cornell University, Produce Safety Alliance, Geneva, NY, USA
EMILY GRIEP, International Fresh Produce Association, Washington, D.C., USA
GREG KOMAR, California Leafy Greens Marketing Agreement, Salinas, CA, USA
NATALIE KROUT-GREENBERG, California Department of Food and Agriculture, Sacramento, CA, USA
CHANNAH M. ROCK, University of Arizona, Maricopa, AZ, USA
DON SCHAFFNER, Rutgers University, New Brunswick, NJ, USA

12:15 Lunch Available in the Exhibit Hall

T6 Technical Session 6 – Laboratory and Detection Methods

Room 401-402

Convenors: Preetha Biswas, Nandini Natrajan

T6-01 8:30 A Colony-Based Confirmation Workflow for *Legionella*
OLAF DEGEN, Thomas Maier, Norman Mauder, Bruker Daltonics GmbH & Co. KG, Bremen, Germany

T6-02 8:45 Development, Modernization, and Validation for the Determination of Ractopamine in Porcine and Bovine Liver and Muscle Tissues through LC-MS/MS
RYAN MATSUDA, Lenin Parrales, Hongnhung Nguyen, Kimberly Nguyen, Catalina Yee, R. Curtis Wallis, USDA-FSIS, Albany, CA, USA

T6-03 9:00 Dual-Chromogenic Membrane Filtration Ampoule Medium for Enumeration of *E. coli* and Coliforms
Lei Zhang, Jerry Tolan, Zack Schwingel, Jeremiah Helsius, Robert S. Donofrio, PREETHA BISWAS, Neogen Corporation, Lansing, MI, USA

T6-04 9:15 Validation of Hygiena™ Prep Xpress Liquid Handling Automation Platform for Pipetting Accuracy, Assay Performance, and Cross-Contamination in Comparison to Manual Pipetting
APRIL ENGLISHBEY, Charles Morris, Sapphira Darmawan, Cordt Grönewald, Hygiena, New Castle, DE, USA

T6-05 9:30 The Recently Described *Listeria sensu lato* Species Will Likely Not be Detected by Rapid Methods and Detection of the *Listeria sensu stricto* Species Varies by Species and Method
CATHARINE R. CARLIN, Sarita Raengpradub, Mérieux NutriSciences, Chicago, IL, USA

T6-06 9:45 Comparison of Matrix-Assisted Laser-Desorption Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS) and a Biochemical Panel to Identify Bacterial Pathogens Directly from Plating Agar
William J. Zaragoza, REID SCHUSTER, U.S. Department of Agriculture, Athens, GA, USA

10:00 Break - Refreshments Available in the Exhibit Hall

Check the IAFP App for changes to the Program.

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

T6-07 10:45 Rapid Identification of Foodborne Bacteria Using Single Cell Raman Spectroscopic Analysis Combined with a Conditional Generative Adversarial Network
KAIDI WANG, Xiangyun Ma, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

T6-08 11:00 Evaluation of Viability of Cells of *Listeria innocua* with Raman Microspectroscopy after Incorporation of Heavy Water (D_2O)
SYLVAIN TRIGUEROS, Thomas Brauge, Tommy Dedole, Sabine Debuiche, Véronique Rebuffel, Sophie Morales, Pierre R. Marcoux, Graziella Midelet, University Grenoble Alpes, CEA, LETI, Grenoble, France

T6-09 11:15 Impact of Disinfectant Neutralizing Buffers Used for Sampling Methods on the Viability of *Listeria monocytogenes* Cells in Monospecies Biofilm
THOMAS BRAUGE, Guylaine Leleu, Anthony Colas, Graziella Midelet, ANSES, Laboratory for Food Safety, Bacteriology and Parasitology of Fishery and Aquaculture Products Unit, Boulogne sur Mer, France

T6-10 11:30 Application of an Engineered Enzyme to Detect *Listeria monocytogenes*
Samantha Felton, Yiping He, Cheryl Armstrong, Chin-Yi Chen, Sue Reed, Joseph Lee, Sharon Walker, Joseph Capobinco, BRYAN BERGER, University of Virginia, Charlottesville, VA, USA

T6-11 11:45 Modernizing *Campylobacter* Analysis at FSIS – Decreasing Time to Result
Jeanetta Tankson, Tye Boynton, Tracy Berutti, KENDRA BILBREY, Sterling Brown, Maria Duenas, USDA-FSIS Midwestern Laboratory, St. Louis, MO, USA

T6-12 12:00 An Electrochemical Biosensor for Rapid Detection of *Campylobacter jejuni*
BAVITHTHIRA SUGANTHAN, Ashley Rogers, Clay Crippen, Hamid Asadi, Christine Szymanski, Ramaraja Ramasamy, Nano Electrochemistry Laboratory, School of Chemical, Materials and Biomedical Engineering, University of Georgia, Athens, GA, USA

12:15 Lunch Available in the Exhibit Hall

T7 Technical Session 7 – Food Safety Systems, Food Processing Technologies, and Seafood

Room 403-404

Convenors: Manivannan Selladurai, Neela Badrie

T7-01 8:30 Modernizing Approaches to HACCP Training to Build an
CAROL A. WALLACE, Lone Jespersen, University of Central Lancashire, Preston, United Kingdom

T7-02 8:45 Driving a Cultural Change in Produce Safety through the Use of a Novel Confidential Data Sharing Platform
De Ann Davis, AFREEN MALIK, Brendan Ring, Sonia Salas, Marlene Hanken, Western Growers Association, Irvine, CA, USA

T7-03 9:00 Growth and Survival of *Listeria monocytogenes* and *E. coli* O157:H7 in Soy Protein-Based Meat Analogue during Storage at Refrigerated and Abuse Temperatures
VARALAKSHMI SUDAGAR, Jason Wan, Institute for Food Safety and Health (IFSH), Illinois Institute of Technology, Summit, IL, USA

T7-04 9:15 New Active Edible Food Packaging Films Entirely from Citrus Peel Wastes
ROWAIDA KHALIL, Department of Botany and Microbiology, Faculty of Science, Alexandria University, Alexandria, Egypt

T7-05 9:30 Humidity Controlled Thermal Inactivation of *Salmonella* Enteritidis in Black Peppercorns
REN YANG, Stephen Lombardo, William Conway, Juming Tang, Washington State University, Pullman, WA, USA

T7-06 9:45 Advances in High-Pressure Pasteurization of Wild-Type and Pressure-Stressed Bacterial Pathogens and Endospores by Synergism with Bacteriocin and Bactericidal Compounds
ALIYAR CYRUS FOULADKHAH, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

10:00 Break - Refreshments Available in the Exhibit Hall

T7-07 10:45 Inactivation of *Staphylococcus aureus* and *Clostridium sporogenes* in Modified Atmosphere Packaged Pizza Crusts by Targeted Directional Microwave Technology
ONAY B. DOGAN, Lexington Trotta, Don Stull, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

T7-08 11:00 Survivability of *Escherichia coli* O157:H7 and *Enterococcus faecium* in a Hydrocolloid Gel Model and Military Ration Bar Under Vacuum Microwave Drying and Storage
DOMINIQUE REILLY, Genevieve Flock, U.S. Army DEVCOM SC, Natick, MA, USA

T7-09 11:15 Phage Biocontrol of *Salmonella* on Raw Poultry Products
MARY THERESA CALLAHAN, Samantha MacKenzie, Joelle Woolston, Alexander Sulakvelidze, Amit Vikram, Intralytix, Inc., Columbia, MD, USA

T7-10 11:30 Detection of Zoonotic Bacteria in Commercially Available Red Swamp Crayfish
JACK PALILLO, Dixie Mollenkopf, Antoinette Marsh, Thomas Wittum, Stephen Reichley, Michael Palillo, Raphael Malbrue, The Ohio State University College of Public Health, Columbus, OH, USA

T7-11 11:45 Population Genetic Structure of *Listeria monocytogenes* Strains Isolated from Salmon and Trout Products and in Food Plants in France
Thomas Brauge, Guylaine Leleu, Benjamin Félix, Karine Capitaine, GRAZIELLA MIDELET, ANSES, Laboratory for Food Safety, Bacteriology and Parasitology of Fishery and Aquaculture Products Unit, Boulogne-sur-Mer, France

T7-12 12:00 Incidence and Pathogenic Potential of *Shewanella* Species in Oysters and Seawater Collected from the Chesapeake and Maryland Costal Bays
TAHIRAH JOHNSON, Gary P. Richards, Esam Almuhaideb, Joan Meredith, Detbra Rosales, Paulinus Chigbu, Ligia DaSilva, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

12:15 Lunch Available in the Exhibit Hall

NOTES

EXHIBITOR SHOWCASE PRESENTATION

AFTERNOON

12:00 p.m. BSI – Mythbusting the Role of Standards

12:30 p.m. – 1:15 p.m.
IAFP Business Meeting
Room 310-311

S39 Developments in Sample Preparation: Implications in Pathogen Detection When Difficult Matrices are Involved

Room 301-303
Organizers: Matthew Moore, Anand Soorneedi, Sloane Stoufer
Convenors: Anand Soorneedi, Sloane Stoufer
Applied Laboratory Methods
Advanced Molecular Analytics
Viral and Parasitic Foodborne Disease

1:30 Sample Prep 101: Challenges and Opportunities
LEE-ANN JAYKUS, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

2:00 A Phage-Based Approach for Rapid Separation, Concentration, and Detection of Bacteria
SAM NUGEN, Cornell University, Ithaca, NY, USA

2:30 Highly Efficient DNA Purification from Complex Matrixes Combining Microscale Solid Phase Extraction (μSPE) and Microfluidics
MARTA PRADO, International Iberian Nanotechnology Laboratory, Braga, Portugal

3:00 Break - Refreshments Available in the Exhibit Hall

3:45 The Role of Sugars in Norovirus Attachment to Commensal Bacteria
MELISSA JONES, Department of Microbiology & Cell Sciences, University of Florida, Gainesville, FL, USA

4:15 Development of a Practical Method for Highly Sensitive Detection of Viral Genomes and Variants from Challenging Environmental Matrices
BYRON F. BREHM-STECHER, Iowa State University, Ames, IA

4:45 Detection of Parasites in Environmental Samples and Food Matrices
YNES R. ORTEGA, University of Georgia, Griffin, GA, USA

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

S40 Novel Foods, Novel Challenges: Food Safety Concerns in Plant-Based and Novel Food Products

Ballroom A-C
Organizer and Convenor: Todd Napolitano
Food Safety Assessment, Audit and Inspection
Food Safety Culture
International Food Protection Issues

1:30 Production Hazards in Plant-Based and Novel Food Products
YANYAN HUANG, ADM, Longmont, CO, USA

2:00 Innovation Challenges in in Plant-Based and Novel Food Products
LILIA M. SANTIAGO-CONNOLLY, Kellogg Company, Battle Creek, MI, USA

2:30 Building HACCP Plans to Meet Unique Challenges in Plant-Based and Novel Food Production
DAVID D. RASMUSSEN, Kraft Heinz Corporation, Moreland Hills, OH, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S41 Food Safety Aspects of Controlled Environment Agriculture Systems for Fresh Produce Production: Current Industry Practices and Future Needs

Room 304-305
Organizers: Mary Anne Amalaradjou, Christopher Callahan, Kristen Gibson, Laura K. Strawn
Convenors: Mary Anne Amalaradjou, Laura K. Strawn
Fruit and Vegetable Safety and Quality
Pre-Harvest Food Safety

1:30 The FSMA Produce Rule and CEA: Where Do These CEA Systems Fall within the Rule and Regulations?
MICHELLE A. SMITH, U.S. Food & Drug Administration, College Park, MD, USA

2:00 Current CEA Industry Best Practices – Practical Concerns and Future Needs for Pathogen Prevention and Control
MONICA NOBLE, 80 Acres Farms, Springdale, AR, USA

2:30 What Does the Research Tell Us about CEA? Current Science and Knowledge Gaps
KRISTEN E. GIBSON, University of Arkansas, Fayetteville, AR, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S42 Not All Acids are Created Equal

Room 310-311
Organizers and Convenors: Erdogan Ceylan, May Yeow
Beverages and Acid/Acidified Foods
Microbial Modelling and Risk Analysis
HACCP Utilization and Food Safety Systems

1:30 What are My Acids?
ERDOGAN CEYLAN, Mérieux NutriSciences, Crete, IL, USA

2:00 Acids to Control Pathogens: The Same Acid but a Variable Response
HEIDY DEN BESTEN, Wageningen University, Wageningen, The Netherlands

2:30 The Application of Acidulants in Different Food Matrices.
LORALYN LEDENBACH, Kraft Heinz, Glenview, IL, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S43 Cyber Attacks on the Food Industry: Virtual Threats with Real Consequences

Room 317-318

Organizers: Mark Kazmierczak, Kristin Schill, Patrick Embwaga
Convenors: Mark Kazmierczak, Kristin Schill

Food Defense
Water Safety and Quality
Communication, Outreach and Education

1:30 The Cyber Risks to Food Manufacturing and Public Health
JENNIFER VAN DE LIGT, ToxStrategies, Inc., Saint Paul, MN, USA

2:00 FBI Support to the Food and Agriculture Sector on Cyber Threats
HENRY HEIM, Federal Bureau of Investigation, Washington, D.C., USA

2:30 How the Food and Agriculture Industry is Collaborating on Cybersecurity
SCOTT ALGEIER, Information Technology-Information Sharing and Analysis Center, Arlington, VA, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S44 Adjunct Antimicrobial Treatments – What are They, and How Do They Fit into a Sanitation Program?

Room 319

Organizers: Juan Goncalves, Josie Greve-Peterson, Dale Grinstead, David Buckley
Convenor: Elaine Black

Food Hygiene and Sanitation
Retail and Foodservice
Communication, Outreach and Education

1:30 Regulation and Consumer Protections Among Adjunct Antimicrobials
KRISTEN WILLIS, EPA, Washington, D.C., USA

2:00 How to Evaluate Adjunct Antimicrobials for Food Settings
BENJAMIN D. MILLER, The Acheson Group, Northfield, MN, USA

2:30 Best Practices for Adjunct Antimicrobial Technologies in Food Settings
SCOTT A. KING, PSSI, Kieler, WI, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S45 The Use of QMRA for Food Safety Interventions in Low- and Middle-Income Countries

Room 405

Organizers: Marcel Zwietering, Arie Havelaar
Convenor: Arie Havelaar

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

1:30 Challenges to QMRA in Africa
BARBARA KOWALCYK, The Ohio State University, Center for Foodborne Illness Research and Prevention, Translational Data Analytics Institute, Columbus, OH, USA

2:00 QMRA or *Salmonella* and *Campylobacter* in the Chicken Chain in Ethiopia and Burkina Faso
MARCEL ZWIETERING, Wageningen University, Wageningen, The Netherlands

2:30 Application of Bayesian Belief Networks to Evaluate Produce Value Chains in Sub-Saharan Africa
CLAUDIA GANSER, University of Florida, Gainesville, FL, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S46 Whole Genome Sequencing: Challenging and Defining Foodborne Pathogen Species, Risk, and Virulence

Room 406

Organizers: Brienna Larrick, Laurie Post, Haley Oliver
Convenors: Laurie Post, Haley Oliver, Dayna M. Harhay

Advanced Molecular Analytics
Microbial Modelling and Risk Analysis

1:30 Case Study: Advancements and Limitations of WGS Technology on *Listeria monocytogenes*
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

2:00 Case Study: Advancements and Limitations of WGS Technology on *Salmonella enterica*
DAYNA HARHAY, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

2:30 WGS of the *Bacillus cereus* Group: Advancements and Limitations
SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

3:00 Break - Refreshments Available in the Exhibit Hall

RT13 Identity Matters: Building a More Inclusive Workplace for Women in Food Safety

Room 315-316

Organizers: Erika Estrada, Melody Ge, Yvonne Masters, Angela Shaw
Convenor: Angela Shaw

Developing Food Safety Professionals

1:30 LAURA GUTIERREZ BECERRA, Amazon, Seattle, WA, USA
CATHERINE N. CUTTER, Penn State University, University Park, PA, USA
MINDY BRASHEARS, Texas Tech University, Washington, D.C., USA
MELODY GE, StarKist Co., Reston, VA, USA
YVONNE C. MASTERS, John B. Sanfilippo & Son, Inc., Elgin, IL, USA
LISA R. ROBINSON, Ecolab Inc., Eagan, MN, USA

3:00 Break - Refreshments Available in the Exhibit Hall

S47 Consequences of Proliferating *Listeria* Species for Detection Methods

Ballroom A-C

Organizers: J. David Legan, Daniel DeMarco
Convenor: J. David Legan

Applied Laboratory Methods
Advanced Molecular Analytics
Food Safety Assessment, Audit and Inspection

3:45 Advances in *Listeria* Taxonomy: Changes and Consequences
CATHARINE CARLIN, Cornell University, Ithaca, NY, USA

4:15 Adapting Food Safety and Environmental Control Programs in the Face of *Listeria* Species Proliferation
LILIA SANTIAGO, Kellogg's, Battle Creek, MI, USA

4:45 Keeping Rapid *Listeria* Screening and Confirmation Methods Effective: Inclusivity and, Exclusivity as New Species are Added
LAURA BLEICHNER, Eurofins GeneScan Technologies GmbH, Freiburg, Germany

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

S48 Addressing Urban Agriculture with a One Health Approach to Food Safety Vulnerabilities and Successes

Room 304-305

Organizers and Convenors: Manan Sharma, Kalmia Kniel

Pre-Harvest Food Safety
Fruit and Vegetable Safety and Quality
Water Safety and Quality

3:45 Developing Urban Agriculture While Prioritizing Food Safety
RACHEL ROSENBERG GOLDSTEIN, University of Maryland College Park, College Park, MD, USA

4:15 Risks in Emerging Agricultural Environments, Controlled and Peri-Urban Environments
PATRICIA MILLNER, U.S. Department of Agriculture – ARS, Beltsville, MD, USA

4:45 Case Studies in Expansion of Controlled Agriculture
GORDON JOHNSON, University of Delaware, Georgetown, DE, USA

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

S49 Advances in Pedagogy, Modality, and Accessibility for Virtual Food Safety Education

Room 319

Organizer and Convenor: Abigail B. Snyder

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

3:45 Strategies for the Future: Food Safety Education Using Resilient Pedagogy Theory and Universal Design for Learning
AMALIA BEARY, Cornell University, Ithaca, NY, USA

4:15 Defining Modality: Outcomes from Combination Synchronous and Asynchronous Virtual Food Safety Trainings
ERIN DICAPRIO, University of California, Davis, Davis, CA, USA

4:45 Examining Pedagogical Strategies for Fully Online Food Safety Curricula
SHANNON MONIQUE COLEMAN, Iowa State University, Ames, IA, USA

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

S50 Recent Advances in Control of *Bacillus* spp. – A Pathogen of Renewed Concern

Room 405

Organizers and Convenors: Sakshi Lamba, Vijay Juneja
Sponsored by IAFP Foundation

Meat and Poultry Safety and Quality
Retail and Foodservice

3:45 Survival Mechanisms of *Bacillus* in Food Production Environments
SAKSHI LAMBA, University College Dublin, Belfield, Ireland

4:15 Control of *Bacillus* in the Meat Industry: Emerging Techniques and Future Perspectives
THOMAS TAYLOR, Texas A&M University, College Station, TX, USA

4:45 Modeling for Predicting the Behavior of *Bacillus* Spores in Meat and Poultry Products
ABHINAV MISHRA, University of Georgia, Athens, GA, USA

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

RT14 Strengthening Food Safety Education and Research across Programs and Departments in the Universities

Room 310-311

Organizers: Rose Omari, Clare Narrod
Convenor: Rose Omari

Food Safety Education
Developing Food Safety Professionals

3:45 NADIYA BOYKO, Uzhhorod National University, Uzhhorod, Ukraine
MICHELLE EMBRY, Health and Environmental Sciences Institute (HESI), Washington, D.C., USA
WILLIAM HALLMAN, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA
ADEWALE OBADINA, Federal University of Agriculture, Abeokuta, Abeokuta, Ogun State, Nigeria
ELNA BUYS, Department of Consumer and Food Sciences, University of Pretoria, Pretoria, South Africa
KEITH WARRINER, University of Guelph, Guelph, ON, Canada

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

RT15 Life after Graduate School and Beyond Academia

Room 315-316

Organizers: Erika Estrada, John Burnett
Convenor: John Burnett

Developing Food Safety Professionals
Communication, Outreach and Education

3:45 DAVID BUCKLEY, Diversey, Charlotte, NC, USA
TIA GLAVE, Catalyst LLC, Baltimore, MD, USA
SUZY HAMMONS, USDA-FSIS, Washington, D.C., USA
CHIP MANUEL, GOJO Industries, Inc., Akron, OH, USA
AJITA SUNDARRAM, Mission Barns, San Francisco, CA, USA

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

RT16 Public-Private Data Sharing: A New Opportunity for Risk-Based Decision Making in Food Safety

Room 317-318

Organizers: Barbara Kowalcyk, David Landsbergen
Convenor: Barbara Kowalcyk

Microbial Modelling and Risk Analysis
Pre-Harvest Food Safety
Data Management and Analytics

3:45 MINDY BRASHEARS, Texas Tech University, Washington, D.C., USA
STEVE BREWER, University of Lincoln, Lincoln, United Kingdom
BARBARA KOWALCYK, The Ohio State University, Center for Foodborne Illness Research and Prevention, Translational Data Analytics Institute, Columbus, OH, USA
SEAN LEIGHTON, Cargill, Inc., Wayzata, MN, USA
KELLY STEVENS, General Mills, Minneapolis, MN, USA
ROBERTA WAGNER, Consumer Brands Association, Arlington, VA, USA

RT17 Acidified Foods: Addressing Challenges in Product Classification Beyond Food Safety. What Role Do Water, Syrups, and Other Low-Water Activity Ingredients Play?

Room 406

Organizer and Convenor: Vidya Ananth

Beverages and Acid/Acidified Foods
Food Law
Low-Water Activity Foods

3:45 DERRICK BAUTISTA, Del Monte Foods, Inc., Walnut Creek, CA, USA
LORALYN LEDENBACH, Kraft Heinz Company, Glenview, IL, USA
LAURE PUJOL, NOVOLYZE, Daix, France
ASHWINI WAGH, The Clorox Service Company, Pleasanton, CA, USA
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA

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

T8 Technical Session 8 – Produce

Room 401-402

Convenors: Achyut Adhikari, Atin Datta

T8-01 1:30 Ranking Produce Safety Priorities of Fresh Produce Industry Stakeholders in the United States
CHARLES BASHIRU BAKIN, Chloe McGovern, Meredith V. Melendez, Christina Kessler, Laura K. Strawn, Don Schaffner, Roger A. Baldwin, Natalie A. Brassill, Robert L. Buchanan, Faith Critzer, Laurel L. Dunn, Arie H. Havelaar, Michele Jay-Russell, KwangCheol Casey Jeong, Wesley L. Kline, Kalmia E. Kniel, Matthew D. Krug, Naim Montazeri, Rafael Munoz-Carpena, Taylor O'Bannon, Robert L Scharff, Keith R. Schneider, Manan Sharma, Rohan V. Tikekar, Michelle D. Danyluk, Barbara Kowalcyk, Kara Morgan, Alexis M. Hamilton, The Ohio State University, Center for Foodborne Illness Research and Prevention, Columbus, OH, USA

T8-02 1:45 Examining Contamination of Romaine Lettuce with *Escherichia coli* O157:H7 through Tissues Damaged by Exposure to Freezing Temperatures
KELLIE P. BURRIS, Esa Jeremy Puntch, Lee-Ann Jaykus, Otto D. Simmons III, Jie Zheng, Elizabeth Reed, Christina M. Ferreira, Sandra M. Tallent, Eric Brown, Rebecca L. Bell, Julie Ann Kase, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Raleigh, NC, USA

T8-03 2:00 Colonization and Internalization of Cantaloupe Fruit with *Escherichia coli* O157:H7 through Blossom Inoculation
KELLIE P. BURRIS, Esa Jeremy Puntch, Tina S. Pfefer, Robin Grant Moore, Lee-Ann Jaykus, Otto D. Simmons III, Jie Zheng, Elizabeth Reed, Christina M. Ferreira, Sandra M. Tallent, Eric Brown, Rebecca L. Bell, Julie Ann Kase, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Raleigh, NC, USA

T8-04 2:15 Plant Growth-Promoting Rhizobacterium *Pseudomonas* spp. Shifts Plant Phytochemical Profiles, Affecting *Salmonella enterica* Association with Baby Kale Leaves
Xingchen Liu, Chiun-Kang Hsu, SHIRLEY MICALLEF, University of Maryland, College Park, College Park, MD, USA

T8-05 2:30 Polydimethylsiloxane (PDMS) Topomimetic Artificial Leaf Surfaces to Study the Influence of the Produce Surface Waterscape on Foodborne Pathogen Dispersion and Adhesion
ASHLYN LIGHTBOWN, Erin L. DiCaprio, University of California, Davis, Davis, CA, USA

T8-06 2:45 Survey of Aquaponics and Hydroponics Systems in the Commonwealth of Virginia
CHYER KIM, Morgan Newton, Crystal Wynn, Marcus Comer, Christopher Mullins, David Crosby, Virginia State University, Petersburg, VA, USA

3:00 Break - Refreshments Available in the Exhibit Hall

T8-07 3:45 Fate of *Listeria monocytogenes* Strains on Different Whole Apple Varieties during Long-Term Simulated Commercial Storage
NATASHA R. SLONIKER, Ourania Raftopoulou, Sophia Kathariou, Randy Beaudry, Elliot T. Ryser, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, USA

T8-08 4:00 Effect of Type of Mulch and Raw Manure Application Technique on Microbial Food Safety Risk on Cucumbers Irrigated with Contaminated Water
JUAN F. MOREIRA, Ivannova Lituma, Kathryn Fontenot, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

T8-09 4:15 Evaluating the Risks Associated with Utilization Modified Washing Machines in the Processing of Leafy Greens
PRAGATHI KAMARASU, Amanda Kinchla, Matthew D. Moore, University of Massachusetts Amherst, Amherst, MA, USA

T8-10 4:30 What We Know about How Consumers Handle and Wash Raw Produce: Findings from Two Observation Studies
SHERYL CATES, Ellen Shumaker, Lisa A. Shelley, Rebecca M. Goulter, Aaron Lavallee, Lee-Ann Jaykus, Benjamin J. Chapman, RTI International, Research Triangle Park, NC, USA

T8-11 4:45 Simulation of Bacterial Cross-Contamination from Farmers' Markets Fomites to Produce and Hands
ZAHRA H. MOHAMMAD, Sujata A. Sirsat, University of Houston, Houston, TX, USA

T8-12 5:00 Metabarcoding Sequencing Reveals the Bacterial and Fungal Communities in Edible Flower (*Torenia fournieri* F. Land.) Cultivated in Organic System
Janne Santos de Morais, Lucélia Cabra Cabral, Whyara Karoline Almeida Costa, Melline F. Noronha, Lilian Osmari Uhlmann, Roger Wagner, Anderson S. Sant'Ana, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

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

T9 Technical Session 9 – Communication Outreach and Education

Room 403-404

Convenor: Matthew Moore

T9-01 1:30 Maintaining Impactful Food Safety Trainings in a Virtual World
AMANDA KINCHLA, Nicole Richard, University Massachusetts, Amherst, MA, USA

T9-02 1:45 Small-Scale Processor Self-Identified Barriers to Effective Food Safety Training Programs
Zachary Berglund, MAEVE SWINEHART, Thais Ramos, Erin L. DiCaprio, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

T9-03 2:00 Utilizing Triangulation to Assess Current Food Manufacturing Training Approaches and Employee Preferences for Future Learning Purposes
EMMA SAMUEL, Ellen W. Evans, Elizabeth C. Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, United Kingdom

T9-04 2:15 Content Analysis of Food Safety Information in Dried Apple Recipes on Youtube, Blogs, Cookbooks and Extension Materials
MEGAN MEI YEE LOW, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

T9-05 2:30 Evaluating the Awareness of Food Safety Messages on Flour and Baking Mix Packages Using Eye-Tracking Technology
Merlyn S. Thomas, Zachary Berglund, Megan Mei Yee Low, Reyhan Adyatama Soewardjono, Isabella Bryan, YAOHUA (BETTY) FENG, Purdue University, West Lafayette, IN, USA

T9-06 2:45 The Impact of Digitizing Training Management Process, Audit, and Assessment on Approval of Food Safety Training Center and Trainers in Dubai United Arab Emirates
SHUGUFTA MOHAMMAD ZUBAIR, Dubai Municipality, Dubai, United Arab Emirates

3:00 Break – Refreshments Available in the Exhibit Hall

T9-07 3:45 Food Safety Implementation and Culture Costs for Small- and Medium-Sized Food Processors Complying with Preventive Controls
CHRISTINA L. WORMALD, Jill Fitzsimmons, Matthew D. Moore, Amanda Kinchla, University of Massachusetts Amherst, Methuen, MA, USA

T9-08 4:00 Beef-Handling Practices of Consumers in the U.S. Virgin Islands
LILLIAN NABWIIRE, Angela M. Shaw, Gail Nonnecke, Rodrigo Tarte, Kenneth Prusa, Iowa State University, Ames, IA, USA

T9-09 4:15 Consumer Food Safety Knowledge, Attitude and Self-Reported Practices with Particular Reference to COVID-19 Hygiene Barriers and Lockdown Measures in Mauritius
CAROL A. WALLACE, Badroonesha Aumjaud, Deena Ramful-Baboolall, University of Central Lancashire, Preston, United Kingdom

T9-10 4:30 Nothing Works! The Mediating Effects of Consumers' Perceived Safety/Risks on Patronage Intention and Restaurants' Marketing Strategies during COVID-19 Pandemic Crisis
Lili Gai, Heng Xie, Gary Peckham, WENQING (WENNIE) XU, LSU AgCenter, Baton Rouge, LA, USA

T9-11 4:45 Consumers' Food Safety Perception of Fresh Produce from Small- and Medium-Sized Farms
JUAN C. ARCHILA-GODÍNEZ, Maria I. Marshall, Renee Wiatt, Amanda J. Deering, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

T9-12 5:00 Validation of a Food Safety Survey for Older Adults
MELISSA M. KAVANAUGH, Jennifer Quinlan, Drexel University, Cherry Hill, NJ, USA

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

EVENING OPTIONS

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

5:30 p.m. – 6:30 p.m., *Room 405*
Bangladesh Association for Food Protection in North America

5:30 p.m. – 6:30 p.m., *Room 304–305*
Korea Association for Food Protection Meeting

5:30 p.m. – 6:30 p.m., *Room 315–316*
Latin America Group Meeting

5:30 p.m. – 6:30 p.m., *Room 317–318*
Southeast Asia Association for Food Protection Meeting

6:30 p.m. – 7:30 p.m.
President's Reception *(by invitation)*
Westin - Allegheny Ballroom

7:00 p.m. – 9:00 p.m.
Student Mixer
Westin - Westmoreland Room

NOTES

Pittsburgh PENNSYLVANIA IAFP 2022 July 31–August 3

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Stop by Booth 601 to watch a demo of SureTrend™ Cloud

WEDNESDAY, AUGUST 3

ALL DAY

8:30 a.m. – 3:00 p.m. — **Poster Session 3**
Hall A

Beverages and Acid/Acidified Foods, Food Chemical Hazards and Food Allergens, Food Toxicology, General Microbiology, Laboratory and Detection Methods, Low-Water Activity Foods, Microbial Food Spoilage, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiomes, Packaging, Seafood

P3-01 through P3-86 – Authors present 9:00 a.m. – 11:00 a.m.
P3-87 through P3-190 – Authors present 1:00 p.m. – 3:00 p.m.

MORNING

8:30 a.m. – 12:15 p.m.

Room 310-311	T10	Technical Session 10 – Viruses and Parasites and Epidemiology
Room 401-402	T11	Technical Session 11 – Food Toxicology, Food Chemical Hazards and Food Allergens, and Dairy
Room 403-404	T12	Technical Session 12 – Low-Water Activity Foods and General Microbiology

8:30 a.m. – 10:00 a.m.

Room 301-303	S51	Safety and Quality of Water Used and Reused in Fresh Produce Supply Chains
Room 315-316	S52	Data Trusts for Food Protection
Room 317-318	S53	Surrounded on All Sides: A Dive into the Unseen Microbiomes of Residential and Industrial Built Environments and Food Safety Implications
Room 319	S54	Increasing Access to and Cultivating Diversity within Food Safety Spaces
Room 405	S55	New Advances in *Alicyclobacillus* Detection, Differentiation, and Control
Room 406	S56	Infusing Cannabis Edibles with the Time-Tested Science of Food Safety
Ballroom B-C	RT18	Application of New Technologies for Improved Food Safety
Room 304-305	RT19	Moving Closer to Zero – Challenges and Opportunities for Reducing Children's Exposures to Toxic Elements from Foods

10:00 a.m. – 10:45 a.m. — **Break – Refreshments Available in the Poster Session Area**

10:45 a.m. – 12:15 p.m.

Room 301-303	S57	What Environmental Surveillance and Water Quality Can Tell Us about Antibiotic-Resistant Bacteria in Pre-Harvest Environments
Room 304-305	S58	Gluten in Fermented or Hydrolyzed Foods – Regulatory, Consumer, and Analytical Perspectives
Room 317-318	S59	Computer Modeling – The Next Step in the Dairy Industry Evolution
Room 405	S60	Life at the Extremes: Fungal Spoilage in Low Water Activity, High Acid, and Thermally Processed Foods and Beverages
Room 406	S61	Mixed Methods Approaches to Investigating Microbial Produce Safety Hazards and Mitigation in Hydroponic and Aquaponic Operations
Ballroom B-C	RT20	Rapid Methods and Automation in Food Microbiology: 40 Years of Developments, Promises, and Disappointments
Room 315-316	RT21	Watching GRAS Grow: Understanding What It Means to be GRAS in the U.S.
Room 319	RT22	Understanding and Overcoming Challenges in Helping Underrepresented Minority Audiences Meet the FSMA PSR 112.22(c) Training Requirements

12:00 p.m. – 1:30 p.m. — **Lunch Available in Hall A**

AFTERNOON

1:30 p.m. – 3:30 p.m.

Room 319-321	SS1	Get-Connected Market: Connecting IAFP Professionals on Food Safety in Africa
Ballroom B-C	S62	Mitigating the Risk of *Salmonella* in Food Products
Room 301-303	S63	Precision Genomics: A Toolbox for the New Era of Food Safety
Room 304-305	S64	The Regulation of Food Ingredients in Diverse Global Markets
Room 310-311	S65	Lessons Learned from Produce Safety Rule Trainings to International Audiences in Latin America
Room 315-316	S66	To Biofilm, or Not to Biofilm: *Listeria monocytogenes* Emerging Existential Dilemma
Room 317-318	S67	Transmissible Locus of Stress Tolerance (tLST) in Bacteria, a Potential Threat to Food Safety and Public Health
Room 403-404	S68	Foodborne Pathogens and Vulnerable Populations: Protecting and Educating the Immunocompromised
Room 405	S69	Spoiled Seafood? Advancements in Detecting Decomposition
Room 406	S70	Mind the Gap: The Role of the Frontline Voice in Food Safety Culture Improvement
Room 401-402	T13	Technical Session 13 – Antimicrobials

3:30 p.m. – 4:00 p.m. — **Break – Refreshments Available outside Ballroom B-C**

4:00 p.m. – 4:45 p.m. — John H. Silliker Lecture
Ballroom B-C

The Power of Diverse Perspectives for Effective Food Safety Management
Katherine M.J. Swanson, Retired, KMJ Swanson Food Safety, Inc., Mendota Heights, MN, USA

EVENING OPTIONS

6:00 p.m. – 7:00 p.m. — **Reception, *Ballroom Foyer***
7:00 p.m. – 10:00 p.m. — **IAFP Awards Banquet, *Ballroom A-C***

WEDNESDAY, AUGUST 3

Posters will be on display 8:30 a.m. – 3:30 p.m.
(See details beginning on page 87)

S51 Safety and Quality of Water Used and Reused in Fresh Produce Supply Chains

Room 301-303

Organizer: Leon Gorris
Convenors: Leon Gorris, Kang Zhou

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

8:30 Overview of Water (re-use) for Fresh Produce and Identifying Safe, Fit-for-Purpose Applications of Re-Usable Water Sources
KANG ZHOU, Food and Agriculture Organization of the United Nations, Rome, Italy

9:00 Bringing Fit-for-Purpose Applications into Fresh Produce Operations and Managing Control
LEON GORRIS, Food Safety Expert, Nijmegen, The Netherlands

9:30 Fit-for-Purpose Water (re-)Use Applications in the Context of Informal Produce Value Chains and Informal Markets in Low- and Middle-Income Countries
ELISABETTA LAMBERTINI, GAIN - Global Alliance for Improved Nutrition, Rockville, MD, USA

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

S52 Data Trusts for Food Protection

Room 315-316

Organizers: Nathan Anderson, Stacey Wiggins, Joseph Scimeca
Convenors: Nathan Anderson, Joseph Scimeca

International Food Protection Issues
Microbial Modelling and Risk Analysis

8:30 Data Trust Frameworks for Secure and Anonymous Data Gathering and Food Safety Use Cases
BRENDAN RING, Creme Global, Grand Canal Quay, Dublin, Ireland

9:00 Significance of Data Sharing to Inform an Efficient and Safe Supply Chain
TOM MADRECKI, Consumer Brands Association, Arlington, VA, USA

9:30 Blockchain Versus Data Trusts: What are They and Why Should I Care?
JENNIFER VAN DE LIGT, ToxStrategies, Inc., Saint Paul, MN, USA

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

S53 Surrounded on All Sides: A Dive into the Unseen Microbiomes of Residential and Industrial Built Environments and Food Safety Implications

Room 317-318

Organizers: Joelle K. Salazar, Catherine Rolfe
Convenors: Joelle K. Salazar, Behzad Imanian, Catherine Rolfe
Sponsored by IAFP Foundation

Advanced Molecular Analytics

8:30 Evaluation of the Kitchen Microbiome and Indicators of Foodborne Pathogen Presence within Households of Low-Income Families with Children
CHRISTINA CARSTENS, University of Texas, School of Public Health, Houston, TX, USA

9:00 Impact of Hygienic Zoning and Sanitation Practices on the Metagenomic Profile of a Ready-to-Eat Meat Processing Environment
MATT HENDERSON, Land O'Frost, Inc., Munster, IN, USA

9:30 Metagenometrakr: Application of 16S rRNA Amplicon and Shotgun Metagenomic Sequencing to Characterize Microbial Community Dynamics in Food Manufacturing Facilities
BRANDON KOCUREK, U.S. Food and Drug Administration, Laurel, MD, USA

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

S54 Increasing Access to and Cultivating Diversity within Food Safety Spaces

Room 319

Organizers: Stephanie Brown, Mary Yavelak, Lily Yang, Jaime Ragos
Convenors: Lester Schonberger, Natalie Seymour
Sponsored by Safe Plates at NC State

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

8:30 Accomodations in Learning Environments
REBECCA BRIGHTWELL, University of Georgia, Athens, GA, USA

9:00 Application of DEI Principles in the Food Industry
YVONNE C. MASTERS, John B. Sanfilippo & Son, Inc., Elgin, IL, USA

9:30 How Diversity Enhances Food Safety Research
MANAN SHARMA, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

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

S55 New Advances in *Alicyclobacillus* Detection, Differentiation, and Control

Room 405

Organizers: Abigail B. Snyder, J. Stan Bailey
Convenor: J. Stan Bailey

Applied Laboratory Methods
Beverages and Acid/Acidified Foods

8:30 New Insights into the Distribution of Genes Linked to Guaiacol Biosynthesis within the *Alicyclobacillus* Genus
ABIGAIL SNYDER, Cornell University, Ithaca, NY, USA

9:00 Improvements in *Alicyclobacillus* Detection and Diagnostic Methods: How Industry Can Differentiate Isolates Based on Spoilage Potential
ADAM JOELSSON, Invisible Sentinel, Philadelphia, PA, USA

9:30 Industry Management Decisions for *Alicyclobacillus* That Balance Product Quality with Preventing Product Waste
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA

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

S56 Infusing Cannabis Edibles with the Time-Tested Science of Food Safety

Room 406

Organizers and Convenors: Kathy Knutson, Jesse Miller

Food Chemical Hazards and Food Allergy
HACCP Utilization and Food Safety Systems
Food Safety Education

8:30 Assume Nothing: What You Think You Know about the Cannabis Industry May Not be True
KATHY KNUTSON, EAS Consulting Group, a Certified Group Company, Green Bay, WI, USA

9:00 Regulations in the Era of the Cannakitchen
JOEL CHAPPELLE, Attorney, Food Industry Counsel LLC, Milwaukee, WI, USA

9:30 Product Safety and Quality Control Considerations When Manufacturing Cannabinoid-Based Novel Food Ingredients
DARWIN MILLARD, Final Bell Corp., Bowmanville, Ontario, Canada

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

RT18 Application of New Technologies for Improved Food Safety

Ballroom B-C

Organizers: Brienna Larrick, Deann Akins-Lewenthal, Pamela Wilger, Vidya Ananth

Convenor: Brienna Larrick

Sponsored by Institute for the Advancement of Food and Nutrition Sciences (IAFNS)

Food Safety Assessment, Audit and Inspection
HACCP Utilization and Food Safety Systems
Microbial Modelling and Risk Analysis

8:30 DERRICK A. BAUTISTA, Del Monte Foods, Inc., Walnut Creek, CA, USA
JOSEPH HOLT, OSI Group, Aurora, IL, USA
TIMOTHY JACKSON, U.S. Food and Drug Administration, CFSAN, Santa Cruz, CA, USA
CINDY JIANG, McDonald's Corporation, Woodridge, IL, USA
MARK MOORMAN, Food and Drug Administration, College Park, MD, USA
JAMES YUAN, PepsiCo, Purchase, NY, USA

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

RT19 Moving Closer to Zero – Challenges and Opportunities for Reducing Children's Exposures to Toxic Elements from Foods

Room 304-305

Organizers: Kellie Casavale, Yuhuan Chen
Convenor: Yuhuan Chen

Food Chemical Hazards and Food Allergy
HACCP Utilization and Food Safety Systems

8:30 CHERYL CALLEN, Gerber/Nestle Infant Nutrition, Arlington, VA, USA
STEVEN HERMANSKY, U.S Food and Drug Administration, U.S. Department of Health and Human Services, College Park, MD, USA
DE ANN DAVIS, Western Growers Association, Pacific Grove, CA, USA
TOM NELTNER, Safer Chemicals, Environmental Defense Fund, Washington, D.C., USA
PAMELA STARKE-REED, Nutrition, Food Safety/Quality, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, MD, USA
EVE STOODY, Center for Nutrition Policy and Promotion, Food and Nutrition Service, U.S. Department of Agriculture, Alexandria, VA, USA

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

S57 What Environmental Surveillance and Water Quality Can Tell Us about Antibiotic-Resistant Bacteria in Pre-Harvest Environments

Room 301-303

Organizers: Jonathan Frye, Autumn Kraft, Manan Sharma

Convenors: Autumn Kraft, Manan Sharma

Water Safety and Quality
Fruit and Vegetable Safety and Quality
Pre-Harvest Food Safety

10:45 Prevalence and Analysis of Antibiotic-Resistant Bacteria in a Mixed-Use Watershed
JONATHAN FRYE, USDA ARS Bacterial Epidemiology & Antimicrobial Resistance Research, Athens, GA, USA

11:15 Methods for the Detection of Antibiotic-Resistant Pathogens in Water Influence What We Find
NIKKI SHARIAT, University of Georgia, Athens, GA, USA

11:45 Utilizing the Antibiotic Resistome to Inform the Presence of Antibiotic-Resistant Pathogens in Water
ANDREA OTTESEN, U.S. Food and Drug Administration, Center for Veterinary Medicine, Office of Research, Laurel, MD, USA

12:15 Lunch Available in Hall A

S58 Gluten in Fermented or Hydrolyzed Foods – Regulatory, Consumer, and Analytical Perspectives

Room 304-305

Organizer and Convenor: Rakhi Panda

Sponsored by IAFP Foundation

Food Chemical Hazards and Food Allergy

10:45 Gluten-Free Labeling of Fermented or Hydrolyzed Foods – Overview of the 2020 Regulation
CAROL D' LIMA, U.S. Food and Drug Administration, College Park, MD, USA

11:15 Consumer Challenges in Maintaining a Gluten-Free Diet Due to the Presence of Gluten in Gluten-Free Labeled Fermented or Hydrolyzed Food Products
AMY KELLER, Gluten Free Watchdog LLC, Marysville, OH, USA; Tricia Thompson, Gluten Free Watchdog, LLC, Manchester, MA, USA

11:45 Analysis of Gluten in Fermented or Hydrolyzed Foods – Challenges and Possible Solutions
RAKHI PANDA, U.S. Food and Drug Administration, College Park, MD, USA

12:15 Lunch Available in Hall A

S59 Computer Modeling – The Next Step in the Dairy Industry Evolution

Room 317-318

Organizers: Sarah Murphy, Justin Falardeau, Chenhao Qian, Aljosa Trmcic
Convenor: Aljosa Trmcic

Dairy Quality and Safety
Microbial Modelling and Risk Analysis

10:45 Fluid Milk Spoilage Prediction Models
SARAH I. MURPHY, Cornell University, Ithaca, NY, USA

11:15 Milk Thermization Model for Safer Unpasteurized Milk Cheesemaking
SARAH ENGSTROM, Grande Custom Ingredients Group, Fond du Lac, WI, USA

11:45 Data-Driven Business Solution for Assessing the Food Safety Risk of Dairy Processors in Canada
VIRGINIE LACHAPELLE Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

12:15 Lunch Available in Hall A

S60 Life at the Extremes: Fungal Spoilage in Low Water Activity, High Acid, and Thermally Processed Foods and Beverages

Room 405

Organizers: Abigail B. Snyder, Emilia Rico
Convenors: Devin Daeschel, Margarita Gomez

Sponsored by IAFP Foundation

Beverages and Acid/Acidified Foods
Low-Water Activity Foods

10:45 Fungal Extremotolerance Shapes Product-Specific Associations with Yeasts and Molds
ABIGAIL B. SNYDER, Cornell University, Ithaca, NY, USA

11:15 How to Identify the Associated Mycobiota of Food and Beverages to Prevent Spoilage
EMILIA RICO, BCN Labs, Rockford, TN, USA

11:45 Dry Heat Resistance of Ascospores – What We Learned from Spacecraft Decontamination
MARGARITA GOMEZ, Retired, Long Beach, CA, USA

12:15 Lunch Available in Hall A

S61 Mixed Methods Approaches to Investigating Microbial Produce Safety Hazards and Mitigation in Hydroponic and Aquaponic Operations

Room 406

Organizer: Sean Fogarty
Convenor: Michelle Smith

Fruit and Vegetable Safety and Quality
Pre-Harvest Food Safety
Water Safety and Quality

10:45 Southeastern United States Hydroponic Food Safety: A Qualitative and Microbial Needs Assessment
SUJATA SIRSAT, University of Houston, Houston, TX, USA

11:15 Hydroponic and Aquaponic Farming Food Safety Risk Investigation by NGS Microbiome Analysis and Food Safety Practice Survey
MENGYI DONG, University of Illinois At Urbana-Champaign, Urbana, IL, USA

11:45 Survival of *Listeria monocytogenes* and *Salmonella* Typhimurium in Hydroponic Leafy Green Systems and Mitigation Strategies to Minimize Product Losses
SANJA ILIC, The Ohio State University, Columbus, OH, USA

12:15 Lunch Available in Hall A

RT20 Rapid Methods and Automation in Food Microbiology: 40 Years of Developments, Promises, and Disappointments

Ballroom B-C

Organizers: Purnendu Vasavada, Roy Betts, Julie Bricher
Convenor: Julie Bricher

Applied Laboratory Methods
Advanced Molecular Analytics

10:45 J. STAN BAILEY, Senior Director Scientific Affairs, bioMérieux, Athens, GA, USA
ROY BETTS, Science Fellow, Campden BRI, Chipping Campden, United Kingdom
THOMAS S. HAMMACK, U.S. Food and Drug Administration – CFSAN, College Park, MD, USA
JOSEPH D. MEYER, Kerry, Waunakee, WI, USA
WILLIAM SHAW, USDA Food Safety & Inspection Service, Washington, D.C., USA
PURNENDU C. VASAVADA, UW- River Falls and PCV & Associates, LLC., River Falls, WI, USA

12:15 Lunch Available in Hall A

RT21 Watching GRAS Grow: Understanding What It Means to be GRAS in the U.S.

Room 315-316

Organizers: Paul Hanlon, Akhila Vasan, Scott Hagedorn
Convenor: Akhila Vasan

Food Chemical Hazards and Food Allergy
Food Law

10:45 ALEX EAPEN, Cargill, Inc., Wayzata, MN, USA
STEVEN HERMANSKY, U.S Food and Drug Administration, U.S. Department of Health and Human Services, College Park, MD, USA
CLAIRE KRUGER, Spherix Consulting Group, Rockville, MD, USA
SYLVESTER MOSLEY, Coca Cola, Atlanta, GA, USA
KATIE OVERBEY, U.S. Food and Drug Administration, Rockville, MD, USA
TONY PAVEL, Perfect Day, Berkley, CA, USA

RT22 Understanding and Overcoming Challenges in Helping Underrepresented Minority Audiences Meet the FSMA PSR 112.22(c) Training Requirements

Room 319

Organizers: Laura Pineda-Bermudez, Davis Blasini
Convenor: Davis Blasini

Food Safety Education
Food Law
Communication, Outreach and Education

10:45 APARNA GAZULA, University of California Cooperative Extension, San Jose, CA, USA
ANNALISA HULTBERG, University of Minnesota, Farmington, MN, USA
RICARDO ORELLANA, Produce Safety Alliance, Amherst, MA, USA
ERIN PARKER, University of Arkansas School of Law Indigenous Food and Agriculture Initiative, Fayetteville, AR, USA
BARRETT VAUGHAN, Tuskegee University, Tuskegee, AL, USA

12:15 Lunch Available in Hall A

T10 Technical Session 10 – Viruses and Parasites and Epidemiology

Room 310-311

Convenors: Arpita Aditya and Surabhi Wason

T10-01 8:30 Sample-Initiated Retrospective Outbreak Investigation of *Salmonella* Weltreveden Linked to Imported Shrimp
TIFFANY GREENLEE, Erin Jenkins, Brooke M. Whitney, Arthur Pightling, Benjamin Schneider, Thai-An Nguyen, U.S. Food and Drug Administration - Center for Food Safety and Applied Nutrition, College Park, MD, USA

T10-02 8:45 The Advantages of Using WGS to Detect Foodborne Illnesses Clusters Potentially Associated with FSIS-Regulated Products
WU SAN CHEN, U.S. Department of Agriculture – Food Safety Inspection Service, Atlanta, GA, USA

T10-03 9:00 Temporal Changes in the Proportion of *Salmonella* Outbreaks Associated with Twelve Broad Commodity Classes in the United States
MICHAEL WILLIAMS, Eric Ebel, U.S. Department of Agriculture – Food Safety Inspection Service, Fort Collins, CO, USA

T10-04 9:15 Geographic Origin of Cattle and *Salmonella* Presence in Beef at Processing
DANIEL TAYLOR, Gavin Fenske, Solenne Costard, Jane Pouzou, Francisco J. Zagmutt, EpiX Analytics, Fort Collins, CO, USA

T10-05 9:30 Incidence of Selected Foodborne Pathogens in Hospital Stool Samples in Ethiopia, 2018 – 2020
DEVIN LAPOLT, Binyam Moges Azmeraye, Desalegne Degefaw, Getnet Yimer, Silvia Alonso, Barbara Kowalcyk, College of Food, Agricultural, and Environmental Sciences, The Ohio State University, Columbus, OH, USA

T10-06 9:45 An Evaluation of Diagnostic Practices Around *Salmonella* spp., *E. coli*, *Campylobacter* spp., and Norovirus at a Large Tertiary Pediatric Hospital
JAMES A. BARKLEY, Meaghan Weldy, Juliana M. Ruzante, Ross Maltz, Barbara Kowalcyk, The Ohio State University, Center for Foodborne Illness Research and Prevention, Columbus, OH, USA

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

T10-07 10:45 Detection of Gastrointestinal Pathogens in Stool Samples Using a Rapid Multiplex PCR Test at a Large Tertiary Pediatric Hospital
Nadira Yasmin, JAMES A. BARKLEY, Juliana M. Ruzante, Ross Maltz, Barbara Kowalcyk, The Ohio State University, Center for Foodborne Illness Research and Prevention, Translational Data Analytics Institute, Columbus, OH, USA

T10-08 11:00 Impact of Seasonal Variation in Soil Bacterial Microbiome of Dairy Farms and Risks Associated with Pathogen Transmission
ARPITA ADITYA, Debabrata Biswas, University of Maryland, College Park, MD, USA

T10-09 11:15 Comparison of an Ultrafiltration Concentration Method for Viruses in Fresh and Frozen Produce with the Reference Method ISO 15216: 2017-1
MATHILDE TRUDEL-FERLAND, Marianne Levasseur, Eric Jubinville, Fabienne Hamon, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

T10-10 11:30 Optimization of CDC's *Cyclospora cayetanensis* Genotyping Workflow Yields More Accurate Genetic Clustering Results
DAVID JACOBSON, Yueli Zheng, Anna Peterson, Travis Richins, Yvonne Qvarnstrom, Vitaliano Cama, Joel Barratt, Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

T10-11 11:45 Two Genetic Lineages of *Cyclospora cayetanensis* Cause Human *Cyclosporiasis* in the USA
JOEL BARRATT, John Shen, David Jacobson, Vitaliano Cama, Yvonne Qvarnstrom, Anne Straily, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

T10-12 12:00 Stability and Infectivity of SARS-CoV-2 in Foods and Common Beverages
MO JIA, Tina Taylor, Sterling Senger, Jonathan Joyce, Greyson Moore, Reza Ovissipour, Andrea Bertke, Virginia Tech, Blacksburg, VA, USA

12:15 Lunch Available in Hall A

T11 Technical Session 11 – Food Toxicology, Food Chemical Hazards and Food Allergens, and Dairy

Room 401-402

Convenors: Melanie Downs and Matthew Krug

T11-01 8:30 An Evaluation of the Analysis for PFAS Using the FDA Protocol and Occurrence of PFAS in Food Contact Materials
CHARLES NESLUND, Eurofins, Lancaster, PA, USA

T11-02 8:45 Analysis of Cashew Allergen Cross-Contact in Shared Frying Oil
Shimin Chen, MELANIE DOWNS, Food Allergy Research and Resource Program, Department of Food Science and Technology, University of Nebraska-Lincoln, Lincoln, NE, USA

T11-03 9:00 Regulatory Policies for Heavy Metals in Spices – A New York Approach: An Update
Maria Ishida, DAN MCCARTHY, Jennifer Trodden, Debra Oglesby, Angela Montalbano, NY Department of Agriculture and Markets, Albany, NY, USA

T11-04 9:15 Estimating Maternal Fumonisin Exposure Level and Risk of Neural Tube Defects during Pregnancy in Guatemala
Olga Torres, ARIEL GARSOW, Jorge Matute, Ronald Riley, Archana Lamichhane, Barbara Kowalcyk, The Ohio State University, Center for Foodborne Illness Research and Prevention, Columbus, OH, USA

T11-05 9:30 Cassava Consumers Exposure to Cyanide in Burhinyi Chiefdom, D.R. Congo and Optimized Reduction Technologies
CHRISTUS MIDERHO, Njue Lucy, Ooko George Abong, Pedagogical Institute of Bukavu, Bukavu, Congo

T11-06 9:45 Nitrite Lowers Transcription of Staphylococcal Enterotoxin C and Triggers the *Sigb* Regulon
Danai Etter, Ramona Büchel, Tabea Patt, Michael Biggel, Taurai Tasara, Nicole Cernela, Marc J.A. Stevens, SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

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

T11-07 10:45 Fate of Aflatoxin B_1 during Manufacture of Wheat Artisanal Beer Made with Contaminated Wheat Malt
MARCIANE MAGNANI, Donald W. Schaffner, Danieli C. Schabo, Karine Peixoto de Aquino, Fabrícia França Bezerril, Marcy Heli Paiva Rodrigues, Eliana Badiale Furlong, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

T11-08 11:00 Global Meta-Analysis of Cheese Microbiomes
RINE REUBEN, Desiree Langer, Nico Eisenhauer, Stephanie Jurburg, German Centre for Integrative Biodiversity Research (iDiv), Halle-Jena-Leipzig, Leipzig, Germany

T11-09 11:15 Thermal Inactivation of *Lactobacillus parabuchneri* in Cheesemilk to Reduce Incidence of Histamine in Alpine-Style Cheeses
Maya Jeremias, Brandon J. Wanless, Kristin M. Schill, KATHLEEN A. GLASS, Food Research Institute, University of Wisconsin-Madison, Madison, WI, USA

T11-10 11:30 Impact of the Addition of Lactic Acid Bacteria with Antimicrobial Activity on the Growth of *Listeria monocytogenes* in Frescal and Semi-Hard Artisanal Minas Cheeses
Geany Targino de Souza Pedrosa, Fernanda Bovo Campagnollo, Bruna Kamimura, Marianna Miranda Furtado, Rafaela Baptista, Henry M. Nascimento, Verônica Ortiz Alvarenga, Marciane Magnani, ANDERSON DE SOUZA SANT'ANA, Department of Food Science, College of Food Engineering - University of Campinas, Campinas, Brazil

T11-11 11:45 Effect of Suspended Solids in Milk on UV-C Dose-Response of *Listeria monocytogenes*
Stephanie G. Handy, Laura Arvaj, Brahmaiah Pendyala, Ankit Patras, Gisèle LaPointe, SAMPATHKUMAR BALAMURUGAN, Agriculture & Agri-Food Canada, Guelph, ON, Canada

T11-12 12:00 Commercial Bacteriophage Preparations for the Control of *Listeria monocytogenes* in Raw and Pasteurized Milk
EMILY EVERHART, Sarah Carson, Dennis J. D'Amico, University of Connecticut, Storrs, CT, USA

12:15 Lunch Available in Hall A

T12 Technical Session 12 – Low-Water Activity Foods and General Microbiology

Room 403-404

Convenors: Margaret Kirchner and Jason Scheffler

T12-01 8:30 Review of Select Historical Outbreak Investigations of *Salmonella* Infections Associated with Cashews and Cashew-Based Food Products
MARGARET KIRCHNER, Donald Obenhuber, Gordon Davidson, Spencer Carran, Julia Mangia, Karunya Manikonda, Katherine Marshall, Stelios Viazis, U.S. Food and Drug Administration – CFSAN, Coordinated Outbreak Response and Evaluation Network, College Park, MD, USA

T12-02 8:45 Evaluation of Enverify™, A Microbial Positive Control, as a Hands-on Training Tool for Environmental Monitoring
JOSHUA ERICKSON, Mark Mulvahill, Emily Ringuette, Stratix Labs, St. Paul, MN, USA

T12-03 9:00 Protective Effects of Freshwater Microalgae Biomasses Toward Probiotic Cultures during Freeze-Drying, Storage, and *In Vitro* Digestion
Ísis Ísis Meireles Mafaldo, Viviane Priscila Barros de Medeiros, Whyara Karoline Almeida da Costa, Tatiana Colombo Pimentel, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

T12-04 9:15 Evaluation of *Listeria monocytogenes* Biofilms Attachment and Formation on Different Surfaces Using a CDC Biofilm Reactor
ERIN MANVILLE, Valentina Trinetta, Eda C. Kaya, Dan Boyle, Umut Yucel, Kansas State University, Manhattan, KS, USA

T12-05 9:30 Effect of Water Activity (a_w) and pH on Thermal Tolerance of *Salmonella* in a Low-Moisture Energy Bar
AMY JONES, Andrew MacIntosh, Keith R. Schneider, University of Florida, Gainesville, FL, USA

T12-06 9:45 Increased Heat Resistance and Transcriptome Sequencing of *Salmonella enterica* Serovar Enteritidis Seduced by Mild Heat
YAN QIU, Chengyang He, Shuxiang Liu, Sichuan Agricultural University, Ya'an, China

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

T12-07 10:45 Effect of Oil Exposure on Heat Resistance of *Salmonella enterica* Enteritidis PT 30 in Peanut Flour
Yan Qiu, Xinyao Cui, SHUXIANG LIU, Sichuan Agricultural University, Ya'an, China

T12-08 11:00 Validation of *E. faecium* as a Surrogate for *Salmonella* in Thermal Processing of Low Water Activity Dough
JENNIFER TODD-SEARLE, Sarah Pappas, Kelly Poltrok-Germain, Nancy R. Bontempo, Mondelez International, East Hanover, NJ, USA

T12-09 11:15 Improvement of Gaseous Chlorine Dioxide Inactivation of *Salmonella* spp. in Chia Seeds Assisted by Mild Heating and Its Effect during Ambient Storage
SURABHI WASON, Jeyamkondan Subbiah, University of Arkansas, Fayettville, AR, USA

T12-10 11:30 Metabolomics of Foodborne Pathogenic Fungi and Their Derivatives
AJIBOLA BAMIKOLE OYEDEJI, Ezekiel Green, Janet Adebiyi, Opeoluwa Ogundele, Sefater Gbashi, Martins Adefisoye, Samson Oyeyinka, Oluwafemi A. Adebo, University of Johannesburg, Doornfontein Campus, Johannesburg, South Africa

T12-11 11:45 Phage Biocontrol of *Salmonella* and *E. coli* on Wheat Kernels
AMIT VIKRAM, Mary Theresa Callahan, Greg Strang, Kristen Irsik, Joanne Sullivan, John Phillips, Mary Gleason, Lucy Wang, Richard Gillespi, Joelle Woolston, Alexander Sulakvelidze, Intralytix, Inc., Columbia, MD, USA

T12-12 12:00 Effects of Caco-2 Cells or Indole/Mucin on *Clostridium perfringens* Toxin Production
CHAO WANG, Tom Defoirdt, Evelien Dierick, Evy Goossens, Filip Van Immerseel, Andreja Rajkovic, Laboratory of Food Microbiology and Food Preservation, Department of Food Technology, Safety and Health, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

12:15 Lunch Available in Hall A

Check the IAFP App for changes to the Program.

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

WEDNESDAY AFTERNOON AUGUST 3

SS1 Get-Connected Market: Connecting IAFP Professionals on Food Safety in Africa

Room 319-321

Organizers: Leon Gorris, Adewale Olusegun Obadina, Kebede Amenu, Joyce Thaiya

Convenor: Leon Gorris

International Food Protection Issues
Developing Food Safety Professionals
Meat and Poultry Safety and Quality

1:30 KEBEDE AMENU, Addis Ababa University, Bishoftu, Ethiopia
LUCIA E. ANELICH, Anelich Consulting, Pretoria, South Africa
ABDOULIE JALLOW, Food Safety & Quality Authority of the Gambia, Serre Kunda, KMC, Gambia
BARBARA KOWALCYK, The Ohio State University, Center for Foodborne Illness Research and Prevention, Translational Data Analytics Institute, Columbus, OH, USA
ADEWALE OLUSEGUN OBADINA, Federal University of Agriculture Abeokuta, Abeokuta, Nigeria

3:30 Break - Refreshments Available Outside Ballroom B – C

S62 Mitigating the Risk of *Salmonella* in Food Products

Ballroom B-C

Organizers and Convenors: Peggy Cook, Jesse Miller

Applied Laboratory Methods
Advanced Molecular Analytics
Low-Water Activity Foods

1:30 *Salmonella*'s Continued Assault on the Food Supply and the Current Science that Underpins FDA's Response on the Farm, in the Facility, and Beyond
ERIC BROWN, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

2:00 The USDA Perspective on *Salmonella* Mitigation
J. EMILIO ESTEBAN, U.S. Department of Agriculture – Food Safety Inspection Service, Washington, D.C., USA

2:30 Understanding Complex *Salmonella* Populations in Food Animal Production
NIKKI SHARIAT, University of Georgia, Athens, GA, USA

3:00 A Glimpse into How Cargill Tests for *Salmonella*
ANGIE SIEMENS, Cargill, Inc., Wichita, KS, USA

3:30 Break - Refreshments Available Outside Ballroom B – C

S63 Precision Genomics: A Toolbox for the New Era of Food Safety

Room 301-303

Organizers: Julie Haendiges, Maria Hoffmann, Rohan Tikekar

Convenors: Julie Haendiges, Rohan Tikekar, Maria Hoffmann

Advanced Molecular Analytics
Applied Laboratory Methods
Microbial Modelling and Risk Analysis

1:30 Applications of Functional Genomics in Foodborne Pathogens
JULIE HAENDIGES, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

2:00 Virulence Profiling and Risk Assessment of *Salmonella enterica*
TBD

2:30 Toward Geographic Attribution of *Salmonella* Using WGS Data: Practicality and Interpretability
XIANGYU (SEAN-U) DENG, University of Georgia Center for Food Safety, Marietta, GA, USA

3:00 The Use of WGS Data to Understand *Listeria monocytogenes* Persistence in Food Manufacturing Environments
ABIGAIL SNYDER, Cornell University, Ithaca, NY, USA

3:30 Break - Refreshments Available Outside Ballroom B – C

S64 The Regulation of Food Ingredients in Diverse Global Markets

Room 304-305

Organizers: Lily Yang, Minh Duong, Margaret Kirchner, Katie Overbey

Convenors: Katie Overbey, Eric Edmunds, Stephanie Brown

Sponsored by IAFP Foundation

Food Law
International Food Protection Issues

1:30 An Introduction to the Pre-Market Review of Food and Color Additives, and the Evaluation of GRAS Ingredients
STEPHANIE HICE, U.S. Food and Drug Administration, College Park, MD, USA

2:00 A Scientific Approach to a Regulatory Conundrum: Modeling pH Changes Due to Small Amounts of Low-Acid Ingredients in Acidic Food Products
FRED BREIDT, U.S. Department of Agriculture – ARS, Raleigh, NC, USA

2:30 An Overview of Food Additive Regulation in Europe
LUCA BUCCHINI, Hylobates Consulting, Rome, Italy

3:00 An Overview of Food Additive Regulation in China and Asia
TBD

3:30 Break - Refreshments Available Outside Ballroom B – C

S65 Lessons Learned from Produce Safety Rule Trainings to International Audiences in Latin America

Room 310-311

Organizers: Clare Narrod, Rita Vera
Convenors: Ana Marisa Cordero, James Rushing

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

1:30 Experience with Delivery of Train-the-Trainer and Grower Trainings in Latin America
JUAN L. SILVA, Mississippi State University, Mississippi State, MS, USA; James Rushing, JIFSAN-University of Maryland, College Park, MD, USA; Noemi Zuniga, IICA, Santiago, Chile; Sergio Nieto-Montenegro, Food Safety Consulting & Training Solutions, LLC, El Paso, TX, USA

2:00 Challenges Latin American Trainers Experiences and Mentoring Needs
ANA MARISA CORDERO, IICA, San Jose, Costa Rica; Noemi Zuniga, IICA, Santiago, Chile

2:30 Findings from a Needs Assessment Amongst Growers in Latin America and the Development of Supplemental Training Material
SERGIO NIETO-MONTENEGRO, Food Safety Consulting & Training Solutions, LLC, El Paso, TX, USA; Ana Luisa Renteria-Monterrubio, Universidad Autonoma de Chihuahua, Chihuahua, CI, Mexico; Ivette Ramírez-Rivas, Food Safety CTS, LLC, Chihuahua, CI, Mexico; Rocio Ortega-Bañuelos, Grupo Alimentos y Nutricion, CHIHUAHUA, CI, Mexico; America Chavez-Martinez, Universidad Autonoma de Chihuahua, Chihuahua, CI, Mexico; Judith Candia-Sanchez, Grupo Alimentos y Nutricion, Chihuahua, CI, Mexico

3:00 Monitoring and Evaluation of the Impact of International PSR Train-the-Trainer and Grower Trainings and Planned Behavioral Experiments
CLARE NARROD, Joint Institute for Food Safety and Applied Nutrition/ University of Maryland, College Park, MD, USA; Ahsanuzzaman Ahsanuzzaman, JIFSAN/ UMD, College Park, MD, USA; Eric Owusu, JIFSAN, College Park, MD, USA; Xiaoya Dou, JIFSAN, College Park, MD, USA

3:30 Break - Refreshments Available Outside Ballroom B – C

S66 To Biofilm, or Not to Biofilm: *Listeria monocytogenes*' Emerging Existential Dilemma

Room 315-316

Organizers and Convenors: Magdalena Olszewska, Francisco Diez-Gonzalez
Sponsored by Center for Food Safety, University of Georgia

Dairy Quality and Safety
Meat and Poultry Safety and Quality
Fruit and Vegetable Safety and Quality

1:30 Persistent and Transient *Listeria monocytogenes* Strains from Retail Deli Environments Vary in Their Ability to Adhere and Form Biofilms
HALEY F. OLIVER, Purdue University, West Lafayette, IN, USA

2:00 Biofilm Formation and Sanitation: A Bad Cocktail for Removal of *Listeria monocytogenes* in the Food Processing Environment
TBD

2:30 Exploring the *Listeria monocytogenes* Biofilm Architecture by Confocal Laser Scanning Microscopy and the Response to Different Treatments
MAGDALENA OLSZEWSKA, Center for Food Safety, University of Georgia / Department of Industrial and Food Microbiology, University of Warmia and Mazury, Olsztyn, PL/ Griffin, GA, USA

3:00 Panel Discussion

3:30 Break - Refreshments Available Outside Ballroom B – C

S67 Transmissible Locus of Stress Tolerance (tLST) in Bacteria, a Potential Threat to Food Safety and Public Health

Room 317-318

Organizer: Peipei Zhang
Convenor: Xianqin Yang
Sponsored by IAFP Foundation

Meat and Poultry Safety and Quality
Food Hygiene and Sanitation
International Food Protection Issues

1:30 Phenotypic and Genomic Characterization of *Escherichia coli* Harboring the Transmissible Locus of Stress Tolerance
PEIPEI ZHANG, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

2:00 Contribution of the Transmissible Locus of Stress Tolerance to Persistence of Pathogens and Biofilm Communities in Food Processing Plants
MICHAEL GÄNZLE, University of Alberta, Edmonton, AB, Canada

2:30 What Makes Ordinary Gene Products so Special? Functional and Biochemical Analysis of Tlst Gene Products in Ubiquitous *Pseudomonas aeruginosa* Clones
UTE RÖMLING, Department of Microbiology, Tumor and Cell Biology Biomedicum C8 Karolinska Institutet, Stockholm, Sweden

3:00 Tracking Stress Tolerant *E. coli* Through the Meat Chain; Where Do They Come from and How Do They Persist?
JOSEPH M. BOSILEVAC, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

3:30 Break - Refreshments Available Outside Ballroom B – C

S68 Foodborne Pathogens and Vulnerable Populations: Protecting and Educating the Immunocompromised

Room 403-404

Organizers and Convenors: Joshua Gurtler, Ellen Evans

Food Safety Education
Communication, Outreach and Education
Food Safety Culture

1:30 Foodborne Illness – A Growing Threat for an Aging Population
JENNIFER QUINLAN, Drexel University, Philadelphia, PA, USA

2:00 Communicating Food Safety Messages to Caregivers of Young Children: Lessons Learned from Previous Surveys and Program Evaluation
YAOHUA (BETTY) FENG, Purdue University, West Lafayette, IN, USA

2:30 Foodborne Illness and Pregnancy: Education for the Unborn
RENEE R. BOYER, Virginia Tech, Blacksburg, VA, USA

3:00 Identifying the Need for Novel Interventions for Enhancing iFood Safety and Optimizing Nutritional Status While Addressing Food Insecurity among Chemotherapy and Immunotherapy Patients
SANJA ILIC, The Ohio State University, Columbus, OH, USA

3:30 Break - Refreshments Available Outside Ballroom B – C

S69 Spoiled Seafood? Advancements in Detecting Decomposition

Room 405

Organizer and Convenor: Kristin Butler

Seafood Safety and Quality

1:30 Industry Perspective on Seafood Decomposition
KEVIN S. EDWARDS, SGS North America, Fairfield, NJ, USA

2:00 Science of Sensory Analysis
PATTI ROSS, U.S. Food and Drug Administration, Collage Park, MD, USA

2:30 New Developments in Rapid Technologies for Detection of Seafood Decomposition
PAUL SARNOSKI, University of Florida, Gainsville, FL, USA

3:00 Chemical Modeling of Seafood Decomposition
RANDY SELF, U.S. Food and Drug Administration, Bothel, WA, USA

3:30 Break - Refreshments Available Outside Ballroom B – C

S70 Mind the Gap: The Role of the Frontline Voice in Food Safety Culture Improvement

Room 406

Organizers: Emma Samuel, Shingai Nyarugwe, Sophie Tongyu Wu, Nic Sharman
Convenors: Ellen Evans, Carol Wallace

Sponsored by IAFP Foundation

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

1:30 Frontline Voice Matters: Recognizing the Voice of the Food Handlers is Key in Cultivating and Maintaining a Positive Food Safety Culture
SHINGAI NYARUGWE, Wageningen University and Research, Wageningen, The Netherlands

2:00 Utilizing Frontline Hand Hygiene Behavioral Practices to Identify Food Safety Culture Strengths and Weaknesses in Food Manufacturing
EMMA SAMUEL, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, United Kingdom

2:30 Food Safety Culture through the Lens of a Snapshot in Time
NIC C SHARMAN, Nic Sharman Consultancy, Didcot, United Kingdom

3:00 Frontline Voices as the Source of Decision-Making: Creating Culture Improvement with Weekly Nudging Action in Food Manufacturing Settings
SOPHIE TONGYU WU, University of Central Lancashire, Preston, United Kingdom

3:30 Break - Refreshments Available Outside Ballroom B – C

T13 Technical Session 13 – Antimicrobials

Room 401-402

Convenors: Andrea Moreno-Switt, Cangliang Shen

T13-01 1:30 Leveraging the Synergistic Effect of Organic Acids with Mild High Pressure Processing to Reduce *Salmonella* spp. in Pork Trim
FRANKLIN SUMARGO, Mary-Grace C. Danao, Joel Parker, Miguel Fudoling, Gary Sullivan, Bing Wang, The Food Processing Center - University of Nebraska Lincoln, Lincoln, NE, USA

T13-02 1:45 Cold Shock Proteins Promote Nisin Tolerance in *Listeria monocytogenes* through Modulation of Cell Envelope Modification Responses
FRANCIS MUCHAAMBA, Joseph Wambui, Roger Stephan, Taurai Tasara, Institute for Food Safety and Hygiene, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland

T13-03 2:00 Antimicrobial Efficacy of the Combination of Organic Acid and Essential Oil in Chitosan Coating Against *Salmonella* and *Listeria* on Tomatoes
TONY JIN, U.S. Department of Agriculture – ARS, Wyndmoor, PA, USA

T13-04 2:15 Effect of Peracetic Acid, Cultured Dextrose Fermentate, and Buffered Vinegar on *Salmonella* and Aerobic Bacteria in Raw Chicken Livers
Leslie Pearl Cancio, Mary-Grace C. Danao, Gary Sullivan, BYRON D. CHAVES, University of Nebraska-Lincoln, Lincoln, NE, USA

T13-05 2:30 Isolation and Characterization of Effective Bacteriophages Against Multiple Serovars of *Salmonella enterica*
CHUAN WEI TUNG, Zabdiel Alvarado-Martinez, Arpita Aditya, Zajeba Tabashsum, Debabrata Biswas, University of Maryland, College Park, MD, USA

T13-06 2:45 Isolation and Characterization of *Escherichia coli*-Specific Phages Infecting Indigenous Antibiotic-Resistant *E. coli* Isolates
SO-HUI PARK, Gi Yeon Song, Si Eun Kang, Yu-Bin Jeon, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

T13-07 3:00 Morphological, Biological, and Genomic Characterization of a Newly Isolated Phage Infecting *Pectobacterium carotovorum* subsp. *carotovorum*
HYEJU JUNG, Su-Hyeon Kim, Ye-Rim Park, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

T13-08 3:15 Isolation and Evaluation of Bacteriophages in Lactic Acid Bacteria (LAB) and Acetic Acid Bacteria (AAB) Spoilage of Fermented Beverages
ALEXIA JOANA LOPEZ GACHUZO, Sofia Maria Arvizu Medrano, Dalia Elizabeth Miranda Castilleja, Universidad Autonoma de Queretaro, Querétaro, QA, Mexico

3:30 Break - Refreshments Available Outside Ballroom B – C

4:00 P.M. – John H. Silliker Lecture

Ballroom B – C

The Power of Diverse Perspectives for Effective Food Safety Management

Katherine M.J. Swanson, Ph.D.
Retired, KMJ Swanson Food Safety Inc.
Mendota Heights, Minnesota, USA

EVENING OPTIONS

6:00 P.M.
Awards Banquet Reception
Ballroom Foyer

7:00 P.M.
Awards Banquet
Ballroom A – C

Check the IAFP App for changes to the Program.

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

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

International Association for Food Protection®

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

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

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

JOHN H. SILLIKER LECTURE

WEDNESDAY, AUGUST 3
CLOSING SESSION
4:00 P.M. – 4:45 P.M.

THE POWER OF DIVERSE PERSPECTIVES FOR EFFECTIVE FOOD SAFETY MANAGEMENT

KATHERINE M.J. SWANSON, PH.D.

Retired, KMJ Swanson Food Safety Inc.
Mendota Heights, Minnesota, USA

WEDNESDAY, AUGUST 3
CLOSING SESSION
4:00 P.M. – 4:45 P.M.

Dr. Katherine "Katie" Swanson is retired from a 40-year food safety career that began with investigating "new" technology (microwave inactivation of *Salmonella* in eggs) while earning her bachelor's degree with distinction at the University of Delaware. Her studies continued at the University of Minnesota researching the fate of aflatoxin during single cell protein production while attaining her master's degree.

Dr. Swanson gained industry experience at Economics Laboratory (Ecolab) as a Microbiology Consultant for food and medical device manufacturers before returning to Dr. Frank Busta's lab at the University of Minnesota to conduct research on *Bacillus cereus* growth and inactivation models during completion of her Ph.D.

For a brief time, Dr. Swanson was an assistant professor of food microbiology at Cornell University and Senior Microbiologist for 3M ATP and Petrifilm™ applications before honing her prevention-focused food safety expertise at The Pillsbury Company. While there, she worked with food safety pioneers Howard Bauman, Bill Sperber, and an incredible team, progressing to the position of Global Product Safety Director at General Mills.

Dr. Swanson returned to Ecolab in 2004 as Vice President of Food Safety. In 2013, she joined the Food Safety Preventive Control Alliance as Program Manager for Curriculum Development and Executive Editor for the U.S. Food and Drug Administration's recognized standardized curriculum for meeting the Food Safety Preventive Controls for Human Foods regulation requirements.

Dr. Swanson served as IAFP President 2012–2013, after joining IAFP in 1979 as a Student Member and in 1980 as a Member. She served on the *Journal of Food Protection* Editorial Board for 12 years; on the *Food Protection Trends* Editorial Board for three years; and on numerous IAFP Award Selection Committees and organizing committees for meetings outside the U.S. She received the GMA Food Safety Award in 2003; the IAFP Fellow Award in 2015; and the Honorary Life Membership Award in 2017.

Dr. Swanson has written and edited numerous chapters, reports, and papers, and served on influential committees, including the International Commission on Microbiological Specifications for Foods (ICMSF) (as Past Secretary); the National Advisory Committee on Microbiological Criteria for Foods (NACMCF); and the National Academies of Science Committees (NAS).

In retirement, Dr. Swanson's interests include genealogy research, travel, and needlework ignored for many years.

JOHN H. SILLIKER LECTURE ABSTRACT

THE POWER OF DIVERSE PERSPECTIVES FOR EFFECTIVE FOOD SAFETY MANAGEMENT

KATHERINE M.J. SWANSON, PH.D.
Retired, KMJ Swanson Food Safety Inc.
Mendota Heights, Minnesota, USA

According to the Merriam-Webster Dictionary *diverse* means:

1. "differing from one another: UNLIKE"

2. "composed of distinct or unlike elements or qualities"

To some, being diverse may seem uncomfortable, because of a desire to fit in. IAFP's mission, "To provide food safety professionals *worldwide* with a forum to exchange information on protecting the food supply" embraces diverse perspectives. IAFP's leadership perspectives change by sequentially electing Executive Board members with government, industry, and academic affiliation. Professional Development Groups and Affiliates provide opportunities to exchange information. These efforts introduce IAFP Members to diverse thinking that makes them better informed. IAFP journals publish diverse topics, and new perspectives gained through these resources can lead to different approaches and breakthroughs.

Incorporating diverse viewpoints is essential to achieve actionable, effective results. The diverse IFT Potentially Hazardous Foods Scientific and Technical Panel changed U.S. FDA guidance for foodservice and retail establishments. Experts with foodservice, retail, processing, education, and state regulatory affiliation evaluated FDA's model *Food Code* definition of "potentially hazardous food," which included a list of foods associated with outbreaks due to lack of temperature control and excluded food with a pH $\leq$ 4.6 or a water activity $\leq$ 0.85. Their recommendation changed the term to "time-temperature control for safety food (TCS)," identified pH and water activity combinations that prevent pathogen growth and addressed parameters for challenge studies when needed. The changes were adopted.

Ignoring diverse perspectives is problematic, exemplified by an attempt to change *Food Code* hand hygiene requirements. Foodservice, retail, academia, sanitation service providers, and state and local regulators developed a report on benefits of alcohol-based hand hygiene products for foodservice applications when access to water was limited. CDC, FDA-CFSAN, and USDA-FSIS participated only in early deliberations, stating that FDA's Center for Drug Evaluation and Research (CDER) participation was needed. The committee's risk reduction strategies were rejected because the regulatory agency that regulates hand hygiene products did not participate. The diverse committee focused on the science and ignored essential regulatory concerns.

International food safety efforts also require diverse viewpoints because regional food, food taboos, and population demographics vary greatly. For 60 years, the International Commission on Microbiological Specifications for Foods (ICMSF) has published internationally relevant food safety management information. The Commission's academic, government, and industry members from 14 countries reach consensus on useful food safety approaches before publishing. ICMSF invites regional food safety experts to discuss their food safety challenges and to review drafts relevant to their expertise and region. Spanish, Portuguese, Chinese and Japanese translations of ICMSF's latest books illustrate global interest.

Skills acquired during a food safety management career are useful in retirement. For example, record verification, essential in genealogy research, can identify public health issues faced by ancestors. Church records occasionally list numerous cholera deaths for weeks. After World War II, my great-grandmother arrived in the USA from Romania, where food was scarce. Stomach cancer was the cause of death on her death certificate. Was she eating moldy grain to survive?

This question suggests the need for diverse food protection thinking in an era of climate change. When food shortages exist, "when in doubt, throw it out" is not useful. Ancient civilizations treated maize with lye, which inactivates aflatoxin, to make tortillas. Aflatoxin grows on maize. Can today's food safety community be part of the solution to provide safe, nutritious food to those in need? They must be part of the solution and applying diverse perspectives can make it happen.

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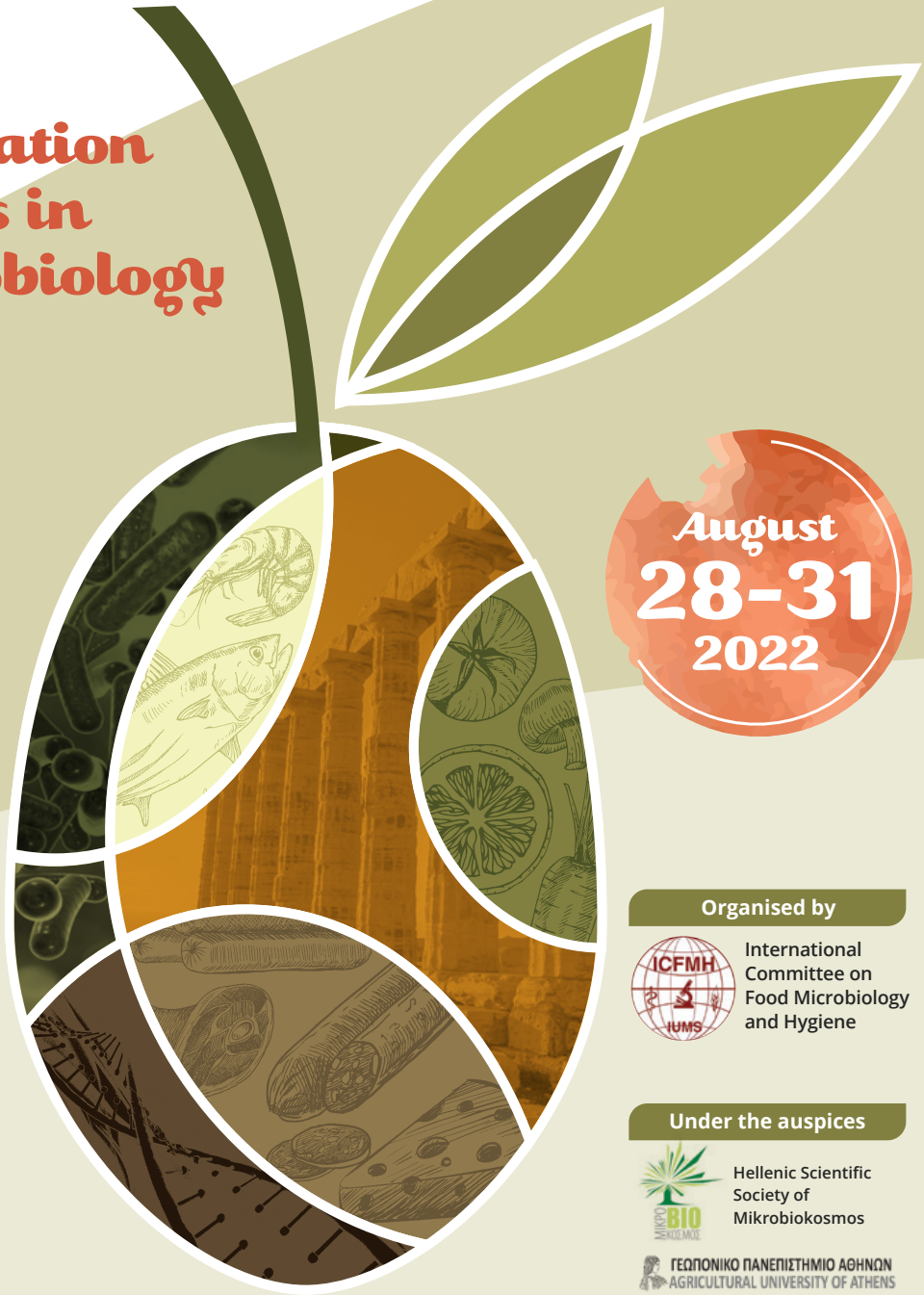

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POSTER SESSIONS

Located in the Exhibit Hall

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

Animal and Pet Food Safety
Dairy
Data Management and Analytics
Epidemiology
Food Defense
Food Law and Regulation
Meat, Poultry and Eggs
Pre-Harvest Food Safety
Produce
Viruses and Parasites
Water
Exhibit Hall

P1-01 through P1-85 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P1-86 through P1-190 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

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

Antimicrobials
Communication Outreach and Education
Food Processing Technologies
Food Safety Systems
Laboratory and Detection Methods
Retail and Food Service Safety
Sanitation and Hygiene
Exhibit Hall

P2-01 through P2-87 – Authors present 10:00 a.m – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P2-88 through P2-189 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

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

Beverages and Acid/Acidified Foods
Food Chemical Hazards and Food Allergens
Food Toxicology
General Microbiology
Laboratory and Detection Methods
Low-Water Activity Foods
Microbial Food Spoilage
Modeling and Risk Assessment
Molecular Analytics, Genomics and Microbiomes
Packaging
Seafood
Hall A

P3-01 through P3-86 – Authors present 9:00 a.m. – 11:00 a.m.
P3-87 through P3-190 – Authors present 1:00 p.m. – 3:00 p.m.

POSTERS

MONDAY POSTERS 8:30 A.M. – 6:15 P.M.

P1 POSTER SESSION 1

Animal and Pet Food Safety
Dairy
Data Management and Analytics
Epidemiology
Food Defense
Food Law and Regulation
Meat, Poultry and Eggs
Pre-Harvest Food Safety
Produce
Viruses and Parasites
Water

Exhibit Hall

P1-01 through P1-85 – Authors present 10:00 a.m.–11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P1-86 through P1-190 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

Animal and Pet Food Safety

P1-01 Killing *Salmonella* in Pet Food — Sonali Sirdesai, Barbara Marcelli, Joël van Mierlo, SOFIA FENG, Mark Hankins, Robin Peterson, Micreos Food Safety, Wageningen, The Netherlands

P1-02 Whole-Genome Sequencing Supports Pathogen Investigations of Animal Food — BEILEI GE, Chih-Hao Hsu, David Rotstein, Xin Li, Errol Strain, U.S. Food and Drug Administration – Center for Veterinary Medicine, Laurel, MD, USA

Dairy

P1-03 Effect of a Commercial Bacteriophage Preparation Against Dairy-Relevant *Salmonella enterica* Serovars in Raw and Pasteurized Milk — Audrey Worth, EMILY EVERHART, Dennis D'Amico, University of Connecticut, Storrs, CT, USA

P1-04 Moved to Technical

P1-05 Thermal Inactivation of *Listeria monocytogenes* in Vegan Dairy Analog Products as a Function of pH and Water Activity — HARNEEL KAUR, Kristin Schill, Kathleen A. Glass, Food Research Institute, University of Wisconsin-Madison, Madison, WI, USA

P1-06 Viability of *Lacticaseibacillus rhamnosus* and *Bifidobacterium* Species in Synbiotic Yoghurt Incorporating Inulin and Lactulose — Thulani Sibanda, Ursula Louise Thomashoff, Jané Du Plooy, ELNA BUYS, Department of Consumer and Food Sciences, University of Pretoria, Pretoria, South Africa

P1-07 Evaluation of an Alternative Rapid Method as Compared to the GB Method for Enumeration of Lactic Acid Bacteria in Yogurt-Based Drinks — JIANWEI HUO, Hang Wang, Dong Liu, 3M China Ltd., Beijing, China

P1-08 Evaluation of a Microbial ATP Bioluminescence-Based Method as a Rapid Detection System for Testing Commercial Sterility in Ultra High Temperature (UHT) Fermented Milk — Kayleen Wan, ROCIO FONCEA, Hongkun Wang, 3M Food Safety, St Paul, MN, USA

P1-09 Matrix Validation of 125 g Nonfat Dry Milk for *Listeria* Using the Hygiena™ BAX® System — JULIE WELLER, Judith Sipple, Craig Jewel, Gina Masanz, Hygiena, New Castle, DE, USA

P1-10 Detection of *Salmonella* and *Listeria* in Large Test Portions of Mexican Style Cheeses Using the Hygiena™ BAX® System — JULIE WELLER, Christine Chapman, Judith Sipple, Gina Masanz, Hygiena, New Castle, DE, USA

P1-11 Detection of Coliforms in Dairy Starter Cultures Using the Hygiena™ Microsnap™ Coliform Assay — RENAE ELLIS, Shreya Datta, Delia Calderon, Gina Masanz, Daniel Belina, Hygiena, Camarillo, CA, USA

P1-12 Detection of Coliforms and *E. coli* in String Cheese and Cream Cheese Using Hygiena™ Microsnap™ — RENAE ELLIS, Lukas Kemp, Delia Calderon, Shreya Datta, Shuopeng Yang, Christina Stam, Eric Ewert, Hygiena, Camarillo, CA, USA

P1-13 Prevalence and Antibiotic Resistance Pattern of *Campylobacter* in the Dairy Farms of Maryland-D.C. Area — ZAJEBA TABASHSUM, Zabdiel Alvarado-Martinez, Arpita Aditya, Anna Phung, Matthew Wall, Phuong Nguyen, Debabrata Biswas, University of Maryland, College Park, MD, USA

P1-14 Understanding Dairy Goat Farmer Food Safety Perceptions While Assessing the Microbial Profile of Raw Goat Milk on Small Mississippi Farms — JACINDA LEOPARD, Rahel Mathews, Juan Silva, Shecoya White, Mississippi State University, Mississippi State, MS, USA

P1-15 *Bacillus mosaicus* Contamination in Milk Processed with Microfiltration — TIMOTHY LOTT, Nicole Martin, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P1-16 Matrix Extension of M-a-98 Listed Phosphatase Methods to Testing Eggnog — Lindsey McRobbie, David Conaway, Janine Schwartz, ROBERT SALTER, Charm Sciences, Inc., Lawrence, MA, USA

P1-17 High Milk Protein Chocolate Chip Cookies Baking Validation to Control *Salmonella* — ARSHDEEP SINGH, Lakshmikantha Channaiah, University of Missouri, Columbia, MO, USA

P1-18 Inhibition of *Listeria monocytogenes* by Combination of Nisin and Organic Acids in Refrigerated Ready-to-Eat Egg Products — SUBASH SHRESTHA, Shelly Riemann, Kevin Kroeger, Ted Brown, Cargill, Inc., Wichita, KS, USA

Data Management and Analytics

P1-19 Development of Standardized Metadata for Machine-Readable Swab Site Descriptions That Support Digitization of Environmental Monitoring Data — JINGZHANG FENG, Devin Daeschel, Damion Dooley, Emma Griffiths, Marc Allard, Ruth Timme, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

Blue Text – Developing Scientist Competitor Green Text – Undergraduate Student Competitor

P1-20 The Value of the National Center for Biotechnology Information's Pathogen Detection Website in Identifying Geographic Clues to Aide Outbreak Investigations — TYANN BLESSINGTON, Ashley Grant, Tiffany Greenlee, Arthur Pightling, Stelios Viazis, U.S. Food and Drug Administration - Center for Food Safety and Applied Nutrition, College Park, MD, USA

Epidemiology

P1-21 Enhancing the Foodborne Diseases Active Surveillance Network (FoodNet) Trends Model Using Bayesian Approaches — DANIEL WELLER, Logan Ray, Daniel C. Payne, Erica Billig Rose, Robert M. Hoekstra, Beau B. Bruce, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

P1-22 Changes in the Incidence of Diagnosed Foodborne Illnesses in a Pediatric Patient Population during the COVID-19 Pandemic — JAMES BARKLEY, Juliana Ruzante, Ross Maltz, Barbara Kowalcyk, The Ohio State University, Center for Foodborne Illness Research and Prevention, Columbus, OH, USA

P1-23 Withdrawn

Food Defense

P1-24 Antiviral Potential of Products Issued from Cranberry and Blueberry Against Murine Norovirus, Hepatitis A Virus and Herpes Simplex Virus Type 1 — CHARLIE BERNIER, Eric Jubinville, Coralie Goetz, Valérie Goulet-Beaulieu, Julie Jean, Institute of Nutrition and Functional Foods (INAF), Université Laval, Québec, QC, Canada

P1-25 Rapid Detection of Fermented Maize (*Ogi*) Adulterated with Sorghum Leaf Sheath Using Near Infrared Spectroscopy — KOLAWOLE BANWO, Josephine Onifade, Titilayo Falade, University of Ibadan, Ibadan, Oyo State, Nigeria

P1-26 Using Ultrafine Ozone Bubble (UO3B) Treatment to Improve Current Fresh Produce Washing Methods — HAKNYEONG HONG, Jiakai Lu, University of Massachusetts, Amherst, MA, USA

Food Law and Regulation

P1-27 Edibles: Are We Prepared? A Critical and Comparative Review of the Cannabis Legislation in Reference to Food Safety in Trinidad, Jamaica and Canada — NEELA BADRIE, Alicia Gittens, Marsha Singh, The University of the West, St. Augustine, Trinidad and Tobago

Meat, Poultry and Eggs

P1-28 Food Safety Education and Intervention in Poultry Value Chain in Kenya and Developing Countries — ERICA KIM, Sanja Ilic, The Ohio State University, Columbus, OH, US

P1-29 *Salmonella* Serotypes from Retail Chicken and Human Infections in the United States, 2002–2018 — FELICITA MEDALLA, Heather Tate, Daniel C. Payne, Jared Reynolds, Logan Ray, Claudine Kabera, Epiphanie Nyirabahizi, Shaohua Zhao, Gayle Langley, Patricia Griffin, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

P1-30 Challenging SPF Chickens with *Salmonella infantis* and *Salmonella* Enteritidis to Establish Parameters for Efficacy of an SRP *Salmonella* Vaccine — KYLE MCCAUGHAN, Milos Markis, Kalmia Kniel, University of Delaware, Newark, DE, USA

P1-31 Persistence of *Salmonella enterica* Inside Biofilms on Food-Contact Surfaces with Chicken Skin Residues and Presence of Native Bacteria — ANGÉLICA GODÍNEZ-OVIEDO, Montserrat Hernández-Iturriaga, Universidad Autonoma de Queretaro, Queretaro, QA, Mexico

P1-32 Moved to Technical

P1-33 Species Distribution and Genes Encoding Antimicrobial Resistance in *Staphylococcus* spp. Isolated from Chickens in Saudi Arabia — ISLEM ABID, Mohamed Salah Abbassi, King Saud University, Riyadh, Saudi Arabia

P1-34 Cold Chain Assessment of Poultry at Retail Selling Points — PEDRO ARRIAGA, Ema Simán, Rodolfo Ramírez, Pedro Martínez, Delhi Tirado, Luis Saavedra, Universidad Autónoma Chapingo, Texcoco De Mora, EM, Mexico

P1-35 Novel Approach for Pathogen Control and Food Safety Management in Poultry Processing: Biomapping Indicator and Pathogen Loads in High- and Low-Level Antimicrobial Intervention Schemes — JUAN DEVILLENA, Texas Tech University, Lubbock, TX, USA

P1-36 Bio-Mapping of Microbiological Indicators in a Commercial Beef Processing Facility — MAKENZIE FLACH, David A. Vargas, Karla M. Rodriguez, Gabriela K. Betancourt-Barszcz, Manoella Ajcet-Reyes, Onay Dogan, Marcos Sanchez Plata, Mark F. Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P1-37 Impact of Temperature and Salt Concentrations for Thermal Inactivation of *Salmonella* in Moisture Enhanced Reconstructed Chicken Patties — ALIK BROWNING, Rebecca Stearns, Corey Coe, Tim Boltz, Peighton Foster, Jesica Temple, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P1-38 Impact of Process Humidity and Fat Content on the Inactivation of *Salmonella* on the Surfaces of Beef and Pork Patties Cooked in an Impingement Oven — IAN HILDEBRANDT, Jordan Nehls, Cynthia Austin, Michael James, Kathleen Glass, Jeffrey Sindelar, Elliot Ryser, Bradley Marks, Michigan State University, East Lansing, MI, USA

P1-39 Effect of Fat Content on Salmonella Lethality on the Surface of Impingement-Cooked Pork Patties — JORDAN NEHLS, Persephone Valentine, Cynthia Austin, Robert Hanson, Dennis Seman, Andrew Milkowski, Jeffrey Sindelar, University of Wisconsin - Madison, Madison, WI, USA

P1-40 Salmonella Inactivation in Bacon Using Microwave or Moist-Air Impingement Oven Cooking — NARINDRA RANDRIAMIARINTSOA, Ian Hildebrandt, Michael James, Elliot Ryser, Bradley Marks, Michigan State University, East Lansing, MI, USA

P1-41 Validating Inactivation of *Salmonella* spp. in Poultry Feed Mills — ZOE LAMBERT, Phil Wells, Peter Goude, Rob Limburn, Jess Crouch, Madalina Smadoiu, Campden BRI, Chipping Campden, United Kingdom

Blue Text – Developing Scientist Competitor Green Text – Undergraduate Student Competitor

P1-42 SMART Multi-Receptor Phage Cocktail to Control the Growth of *Salmonella In Vitro* and on Chicken Skin — CARLOS MARTINEZ-SOTO, Cezar Khursigara, Michael McClelland, Janet Lin, Hany Anany, University of Guelph, Guelph, ON, Canada

P1-43 Withdrawn

P1-44 Bacterio-Phage as Post-Lethality Intervention to Reduce *Listeria* on Hard Boiled Eggs — Sonali Sirdesai, Loïs Hiltjesdam, Barbara Marcelli, Joël van Mierlo, MARK HANKINS, Robin Peterson, Micreos Food Safety, Atlanta, GA, USA

P1-45 Withdrawn

P1-46 Withdrawn

P1-47 Comparison of Biological Food Safety Hazards and Risk in Cellular-Based and Conventional Beef Production — CONNOR M. HORN, Salil Bapat, Ajay P. Malshe, Michael P. Sealy, Haley Oliver, Purdue University, West Lafayette, IN, USA

P1-48 A Multiplex PCR Workflow for Quantification of *Salmonella* in Diverse Meats — Patrick Stephenson, Dean Leak, Annette Hughes, David Crabtree, MATTHEW HAHS, Thermo Fisher Scientific, Lenexa, KS, USA

P1-49 Quantification of *Salmonella* at Various Stages of Poultry Processing — Patrick Stephenson, Annette Hughes, Dean Leak, David Crabtree, Craig Manthe, MATTHEW HAHS, Thermo Fisher Scientific, Lenexa, KS, USA

P1-50 AOAC-RI Validation of Hygiena™ BAX® System Salquant™ Methods for Poultry Rinsates, Ground Beef, Ground Pork, Beef Trim, Pork Trim, and Microtally™ Manual Sampling Devices on Beef and Pork Trim — SAVANNAH APPLEGATE, Rossy Bueno Lopez, April Englishbey, Nisha Corrigan, Stacy Stoltenberg, Tyler Stephens, Marcos Sanchez Plata, Qualicon Diagnostics LLC, A Hygiena Company, New Castle, DE, USA

P1-51 Withdrawn

P1-52 Detection of *Salmonella* Typhi and *E. coli* O157:H7 within Liquid Whole Egg during Refrigerated Storage by Organoleptic Sensing — KASEY NELSON, Quincy Suehr, Ian Hildebrandt, Michael James, Bradley Marks, Michigan State University, East Lansing, MI, USA

P1-53 Efficacy of Organic Acid Treatments for the Reduction of *Listeria monocytogenes* on Hard-Boiled Eggs — BASHAYER KHOUJA, Megan Fay, Joelle K. Salazar, Diana Stewart, Illinois Institute of Technology, Institute for Food Safety and Health, Bedford Park, IL, USA

P1-54 Validation of in-Shell Whole Egg Pasteurization to Achieve a 5-Log Reduction in *Salmonella* and Study Its Outgrowth at 4°C and 20°C during 10 Weeks of Storage — MICAH T. BLACK, Charles Herron, Aftab Siddique, Bet Wu, Laura Garner, Shelly McKee, Amit Morey, Auburn University, Auburn, AL, USA

P1-55 Influence of Beef Carcass Exudate on Peroxyacetic Acid Tolerance in Shiga-Toxin Producing *E. coli* — GOVINDARAJ DEV KUMAR, Ikechukwu Oguadinma, Abhinav Mishra, University of Georgia, Griffin, GA, USA

P1-56 *Salmonella* Serotypes Vary in Ability to Use Dust as a Vehicle for Produce Contamination — GOVINDARAJ DEV KUMAR, Kelly Bright, Laurel Dunn, University of Georgia, Griffin, GA, USA

P1-57 *Salmonella* Quantification (SalQuant™) with the Hygiena™ BAX® System for Turkey Carcass Swabs — JULIE WELLER, Deja Latney, Christine Chapman, Savannah Applegate, Judith Sipple, Shawna Laughlin, Hygiena, New Castle, DE, USA

Pre-Harvest Food Safety

P1-58 *Salmonella* Quantification (SalQuant™) with the Hygiena™ BAX® System for Poultry Crops and Lungs — JULIE WELLER, Christine Chapman, Savannah Applegate, Stacy Stoltenberg, Anna Van-Stelten Carlson, Hygiena, New Castle, DE, USA

P1-59 Detection of *Campylobacter* from Boot Swabs Using the Hygiena™ BAX® System Real-Time PCR Assay — JULIE WELLER, Christine Chapman, Deja Latney, David Luedeke, Andrew Mason, Hygiena, New Castle, DE, USA

P1-60 Detection of *E. coli* O157:H7 and *Salmonella* in Baby Carrots Using the Hygiena™ BAX® System — JULIE WELLER, Deja Latney, Christine Chapman, Celina To, Hygiena, New Castle, DE, USA

P1-61 Associations between Soil Nutrient Levels with *Escherichia coli* and Total Coliform Concentrations and *Listeria* and *Salmonella* Prevalence — CAMRYN COOK, Monica Ponder, Claire M. Murphy, Alexis M. Hamilton, Renee Boyer, Steven Rideout, Rory Maguire, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

P1-62 Evaluating Antimicrobial Efficacy of Cover Crops to Reduce Pathogen Load in Contaminated Soil — Olivia Haley, MANREET BHULLAR, Cary Rivard, Kansas State University, Olathe, KS, USA

P1-63 Spatial Versus Non-Spatial Variance in *E. coli* Levels Differs by Scale of Analysis in Virginia Ponds — CLAIRE M. MURPHY, Reza Ovissipour, Renee Boyer, Daniel Weller, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

P1-64 Characterization of *Escherichia coli* Isolates from Produce Irrigation Water in Kansas and Missouri by Whole-Genome Sequencing — ERIN MANVILLE, Valentina Trinetta, Manreet Bhullar, Londa Nwadike, Yezhi Fu, Edward G. Dudley, KaWang Li, Kansas State University, Manhattan, KS, USA

P1-65 Not Dead Yet: Generic *E. coli* Die-Off Rates That are Faster Than Expected and the Importance of Accounting for Stress-Resistant Bacterial Populations — CLAUDIA GANSER, Arie Havelaar, Michelle Danyluk, Laura K. Strawn, University of Florida, Gainesville, FL, USA

P1-66 Cross-Contamination from Environmental Matrices: A Vehicle for Transfer of Foodborne Pathogens to Melons Grown in Various Regions of the United States — RICHARD PARK, David Rowlands, Martin Porchas, Paul Brierley, Kevin Crosby, Bhimanagouda Patil, Sadhana Ravishankar, University of Arizona, Tucson, AZ, USA

P1-67 Investigation of the Effect of Growth Media on the Survival of *E. coli* in Agricultural Soil — CAMERON BARDSLEY, Manan Sharma, Keith Schneider, U.S. Department of Agriculture – ARS, Byron, GA, USA

P1-68 Survival of *Escherichia coli* and Changes in Physicochemical Parameters in Aquaponic Systems during Basil and Lettuce Production — EMILY QUACH, Patricia Millner, Jose-Luis Izursa, Vijay Chhetri, University of Maryland, College Park, MD, USA

P1-69 Aggregative Swab Sampling Performs No Worse Than Composite Tissue Sampling in Recovering Quality and Safety Indicator Bacteria from Commercial Romaine Lettuce Fields — JORGE QUINTANILLA PORTILLO, Rachel Gathman, Jiaying Wu, Genevieve Sullivan, Eric Wilhelmsen, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P1-70 Presence and Persistence of Generic *E. coli*, STEC, and *Listeria monocytogenes* in Certified Organic Integrated-Crop Livestock Farm Spinach Fields in California and Minnesota — SEJIN CHEONG, Carolyn Chandler, Sequoia Williams, Amelie Gaudin, Emily Evans, Lee Klossner, Paulo Pagliari, Michele Jay-Russell, Peiman Aminabadi, Patricia Millner, Fawzy Hashem, Alda Pires, UC Davis School of Veterinary Medicine, Davis, CA, USA

P1-71 Prevalence of *Escherichia coli* and Coliform Bacteria in Lettuce and Soil Samples as a Result of the Use of Organic Fertilizers in Cambodia — ELLEN MENDEZ, Carla Schwan, Jessie Vipham, Kansas State University, Manhattan, KS, USA

P1-72 Efficacy of Nanoemulsified Benzyl Isothiocyanate for Controlling *Escherichia coli* O157 on Spinach at the Pre-Harvest Level — HSIN-BAI YIN, Chi-Hung Chen, Christine Mayer, Dana Harriger, Jitendra Patel, U.S. Department of Agriculture – ARS, Beltsville, MD, USA

P1-73 Aggregative Swab Sampling Method for Romaine Lettuce Show Similar Quality Indicators and Microbial Profiles Compared to Composite Tissue Samples in a Pilot Study — RACHEL GATHMAN, Jorge Quintanilla Portillo, Genevieve Sullivan, Matthew J. Stasiewicz, University of Illinois at Urbana Champaign, Urbana, IL, USA

P1-74 Survival of *Escherichia coli* O157:H7 and *Salmonella enterica* on Daikon Microgreens Grown on Different Cultivation Matrixes — CHI-HUNG CHEN, Hsin-Bai Yin, Jitendra Patel, Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

P1-75 Presence of Indicator and Foodborne Pathogens from Pre- and Post-Harvest Integrated Crop-Livestock Farm Environments and Fresh Produce on the Eastern Shore of Maryland — BRIAN GOODWYN, Anuradha Punchihewage Don, Melinda Schwarz, Patricia Millner, Joan Meredith, Fawzy Hashem, Chyer Kim, Debabrata Biswas, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P1-76 Application of Bacteriophages to Prevent Attachment of Non-O157 Shiga-Toxigenic *Escherichia coli* to Caco-2 Cells — Emma Turner, DIVYA JARONI, Oklahoma State University, Stillwater, OK, USA

P1-77 Evaluation of Lactic Acid Bacteria for Acid and Bile Tolerance and Inhibition of Shiga-Toxigenic *Escherichia coli* — DIVYA JARONI, Kaylee Rumbaugh, Jordan Drake, Oklahoma State University, Stillwater, OK, USA

P1-78 Survival of Shiga Toxin-Producing *Escherichia coli* on In-Shell Pecans Contaminated with Soil — ERIN RAMSAY, Erika Kadas, Peter Rubinelli, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P1-79 A Continuous Flow-Through System Utilizing White-Rot Fungi, *Pleurotus ostreatus*, and Its Effects on the Inhibition on *Escherichia coli* — ALEXIS OMAR, Aubrey Inkster, Anastasia E. M. Chirnside, Kalmia Kniel, University of Delaware, Newark, DE, USA

P1-80 Cecal Metabolome Profiles of Turkey Poults in Response to *Salmonella* Heidelberg Challenge with or without Turkey-Derived *Lactobacillus* Probiotic and Trans-Cinnamaldehyde — GRACE DEWI, Ranjith Ramanathan, Anup Kollanoor Johny, University of Minnesota, Saint Paul, MN, USA

P1-81 Reduction of *Salmonella* and *E. coli* O157:H7 in Fecal Samples Collected from Beef Cattle Treated with Commercial Direct-Fed Microbials — MAKENZIE FLACH, Onay Dogan, Wanda M. Kreikemeier, Kendra Nightingale, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P1-82 Effects of *Bacillus* and *Lactobacillus* Supplementation in Milk Replacer Diets of Angus×Holstein Calves on the Prevalence and Concentration of *Salmonella* spp. and *Escherichia coli* O157 in Mesenteric Lymph Nodes, Spleen, Cecal Fluid, Rumen Fluid, and Feces — Kellen Habib, Steven Quanz, Kristen Smith, Anthony Tarpoff, Cassandra Jones, Qing Kang, Barry Bradford, SARA GRAGG, Kansas State University, Manhattan, KS, USA

P1-83 The Effects of the Administration of a *Saccharomyces cerevisiae* Direct-Fed Microbial on the Prevalence of *Salmonella* in Bovine Mesenteric Lymph Nodes — Kellen Habib, John Schmidt, Cody Nichols, Qing Kang, Joseph Bosilevac, Dayna Harhay, SARA GRAGG, Kansas State University, Manhattan, KS, USA

P1-84 Characterization and Comparison of *Salmonella* spp. Isolated from the Mesenteric Lymph Nodes of Cattle and the Feedlot Environment — John Schmidt, Kellen Habib, Cody Nichols, Terrance Arthur, Joseph Bosilevac, SARA GRAGG, Dayna Harhay, Kansas State University, Manhattan, KS, USA

P1-85 Detection of *Salmonella* spp. and *Escherichia coli* O157:H7 on Beef Cattle Hides — CESAR A. SEPULVEDA, Karla M. Rodriguez, David A. Vargas, Onay Dogan, Mark F. Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

Produce

P1-86 Effectiveness of Surface Sanitizers Against *Salmonella* Typhimurium in Hydroponic Lettuce System — MARGARET MOODISPAW, Melanie L. Lewis Ivey, Sanja Ilic, The Ohio State University, Wooster, OH, USA

P1-87 Beneficial *Pseudomonas* spp. Protected Kale from Salt Stress and Influenced Association with *Salmonella enterica* — XINGCHEN LIU, Chiun-Kang Hsu, Shirley Micallef, University of Maryland, College Park, College Park, MD, USA

P1-88 *In Vitro* Antagonistic Activity of Indigenous Microbiota of Spinach Grown in Soil with Different Nitrogen Content Against Common Outbreak Foodborne Pathogens — KARLA SOLIS SALAZAR, Vijay Joshi, Alejandro Castillo, Texas A&M University, College Station, TX, USA

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Green Text – Undergraduate Student Competitor

P1-89 Assessing *Salmonella enterica* Dynamics on Lettuce over Time in Relation to Contamination Levels — Shirley Micallef, CHRIS BOLLINGER, Sarinah Wahl, University of Maryland, College Park, MD, USA

P1-90 Sugar Levels in Tomato Fruit Do Not Explain Differential Ability of Modern Cultivar and Heirloom Tomato Fruit to Support *Salmonella* Newport — Wesley Deaver, Chris Bollinger, Sarinah Wahl, Adam Hopper, SHIRLEY MICALLEF, University of Maryland, College Park, MD, USA

P1-91 Effect of UV-C Light Treatment Against *Listeria monocytogenes* on Hydroponically Grown Lettuce and Its Effect on Quality — IVANNOVA LITUMA, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P1-92 *Listeria monocytogenes* Biofilm Formation on Coated and Non-Coated Stainless-Steel Coupons in Lettuce Juice as Affected by Environmental Microbes — GANYU GU, Jia Zhen, Marina Lichtenwald, Bin Zhou, Boce Zhang, Yaguang Luo, Xiangwu Nou, U.S. Department of Agriculture – ARS, EMFSL, Beltsville, MD, USA

P1-93 Shift in *Listeria monocytogenes* and Microbiome on Whole Avocado, Fresh-Cut Cantaloupe and Romaine Lettuce during Storage at Refrigerated and Abused Temperatures — GANYU GU, Marina Lichtenwald, Yaguang Luo, Patricia Millner, Xiangwu Nou, U.S. Department of Agriculture – ARS, EMFSL, Beltsville, MD, USA

P1-94 Evaluation of a Filtration System for the Detection of *Cyclospora Cayetanensis* in Water during Cabbage Processing — RAWANE RAAD, Ynes Ortega, The University of Georgia, Griffin, GA, USA

P1-95 Impact of Sanitizers on Nutrient Film Technique (NFT) Grown Lettuce and Basil — ABIGAIL ABA MENSAH, Ivey L.L Melanie, Therese Marie Miller, Ilic Sanja, Ohio State University, Columbus, OH, USA

P1-96 Effect of Ultraviolet Light Treatment on Microbial Reduction and Quality of Lettuce Varieties — SUSANNA AIYEDUN, Ronald Dixon, Bukola Onarinde, University of Lincoln, Holbeach, United Kingdom

P1-97 Effectiveness of UVC Light Treatment in Controlling *Listeria monocytogenes* in Hydroponic Fertilizer Solutions — JANNY MENDOZA, Achyut Adhikari, Lousiana State University, Baton Rouge, LA, USA

P1-98 Efficacy of Ozonated Water Delivered via Nanobubble Technology to Inactivate *E. coli* O157:H7 on Fresh-Cut Lettuce during Centrifugal Drying — DE'ANTHONY MORRIS, Teresa M. Bergholz, Elliot Ryser, Michigan State University, East Lansing, MI, USA

P1-99 The Effect of Natural Plant-Based Antimicrobials on Inactivating *Salmonella* and MS2 Bacteriophage in Cucumbers — XIN LUO, Karl Matthews, Rutgers University, New Brunswick, NJ, USA

P1-100 Microbubbles Remove *Listeria monocytogenes* from the Surface of Stainless Steel, Cucumber, and Avocado — PENGYU CHEN, Joseph Eifert, Laura Strawn, Sunghwan Jung, Virginia Tech, Blacksburg, VA, USA

P1-101 Survival of *Listeria monocytogenes* on Avocado Skin and Potential for Transfer and Growth in the Pulp after Cutting — MINJI HUR, Francisco Diez-Gonzalez, University of Georgia, Center for Food Safety, Griffin, GA, USA

P1-102 Comparison of Two Triple-Wash Processes with a Combination of Peroxyacetic Acid and H_2O_2 to Reduce Populations and Mitigate Cross-Contamination of *Salmonella* Typhimurium and *Enterococcus faecium* on Tomatoes — REBECCA STEARNS, Corey Coe, Lisa Jones, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P1-103 Efficiency of Power Ultrasound-Based Hurdle Technology to Reduce *Listeria monocytogenes* on Grape Tomatoes — XINYI ZHOU, Joelle K. Salazar, Megan Fay, Wei Zhang, Illinois Institute of Technology, Institute for Food Safety and Health, Bedford Park, IL, USA

P1-104 Modeling Effects of Hydrogen Peroxide Concentration, Treatment Time and Dwell Time on the Efficacy of Cold Plasma-Activated Hydrogen Peroxide Aerosol Against *Salmonella* Typhimurium and *Listeria innocua* on Tomatoes — XUETONG FAN, Bryan Vinyard, Yuanyuan Song, U.S. Department of Agriculture – ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P1-105 Gas Phase-Hydroxyl Radical Treatments to Decontaminate and Extend the Shelf Life of Fruit and Vegetables — Mahdiyeh Hasani, Lara Warriner, KEITH WARRINER, University of Guelph, Guelph, ON, Canada

P1-106 Microbial Load on Fresh Blueberries Harvested by Different Methods — Peien Wang, Minji Hur, Yixin Cai, Lisa DeVetter, Fumiomi Takeda, JINRU CHEN, The University of Georgia, Griffin, GA, USA

P1-107 Efficacy of Dry Heat Treatment in Reducing *Salmonella* Population on Artificially Inoculated Mung Beans — ARLETTE SHAZER, Tong-Jen Fu, U.S. Food and Drug Administration, Division of Food Processing Science and Technology, Bedford Park, IL, USA

P1-108 Application of Cinnamon Oil Nanoemulsion to the Control the *Salmonella* spp. in Mungbean Seeds and Sprouts — SHIVAM JOSHI, Kanika Bhargava, Hari Kotturi, University of Central Oklahoma, Edmond, OK, USA

P1-109 Efficacy of Hydrogen Peroxide for Disinfection of Sprout Seeds Inoculated with *Salmonella,* as Affected by Sanitizer Concentration, Treatment Time and Seed Type — YIKAI YANG, Tam Ngo, Tong-Jen Fu, Illinois Institute of Technology, Institute for Food Safety and Health, Bedford Park, IL, USA

P1-110 Probing the Bacteriophage-*Salmonella enterica* Interaction on Alfalfa Sprouts — CATHERINE WONG, Siyun Wang, Food, Nutrition and Health, University of British Columbia, Vancouver, BC, Canada

P1-111 Efficacies of Chlorine and Peroxyacetic Acid Against *Listeria monocytogenes* in Simulated Apple Dump Tank Water — RORY WANG, Xiaoye Shen, Faith Critzer, Meijun Zhu, Washington State University, Pullman, WA, USA

P1-112 Isothermal Inactivation of *Salmonella, Listeria monocytogenes,* and *Enterococcus faecium* NRRL B-2354 in Plant-Based Butters — Bradley Taylor, Ruo Fen Liao, Brenda Villalobos Huitron, Carolyn Chen, Jack Davis, KRISTI GOWANS, Brigham Young University, Provo, UT, USA

P1-113 Relative Humidity Influences Survival of *Salmonella enterica* in Minimally Processed Broccoli Stored at Different Temperatures — Jade Morais Alves, Verônica Ortiz Alvarenga, Geany Targino de Souza Pedrosa, MARCIANE MAGNANI, Donald Schaffner, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P1-114 Microbial Characteristics and Chemical Composition of Fermented Olives Performed at Home — Erin DiCaprio, Zoe Mitchell, Peter Finnegan, Hanna Louvau, Heesun Kim, Amanda Ting, Mariah Mier, Natalia Ribeiro, Melanie Hanlon, THAIS RAMOS, Wannes Van Beeck, Lei Wei, Maria Marco, University of California, Davis, Davis, CA, USA

P1-115 Transcriptome Profiling of *Listeria monocytogenes* Growth in Cantaloupe Juice Compared to Laboratory Growth Medium (TSB) — MARINA LICHTENWALD, Ganyu Gu, Jie Zheng, Xiangwu Nou, U.S. Department of Agriculture – ARS, Beltsville, MD, USA

P1-116 Let's Cut the Rug: Investigating Food Safe Alternative Materials for Watermelon Harvest Activities — ANGELA MARIE C. FERELLI GRUBER, Jennifer Jones, Gordon Johnson, Kalmia Kniel, University of Maryland, College Park, MD, USA

P1-117 Attachment Strength of Foodborne Pathogens on Melon Hybrids from Various Regions in the United States — David Rowlands, Qi Wei, Martin Porchas, Paul Brierley, Bhimanagouda Patil, SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA

P1-118 Relative Growth of *Listeria monocytogenes* in Unpasteurized and Pasteurized Low Acid Produce Juices — ERIK OHMAN, Joy Waite-Cusic, Jovana Kovacevic, Oregon State University, Corvallis, OR, USA

P1-119 Efficacy of Free Chlorine and Peracetic Acid Against *Listeria monocytogenes* in Spent Citrus Wash Water — Kimiko Casuga, CHLOE MCGOVERN, Amanda Lathrop, California Polytechnic State University, San Luis Obispo, CA, USA

P1-120 Effect of Fine Bubbles and Electrochemical Disinfection on Efficacy of Chlorine Against Bacterial Pathogens on Bell Peppers — JYOTI ARYAL, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P1-121 Characterization of *Listeria monocytogenes* Isolated from Frozen Vegetables Processing Plant: Subtyping, Biofilm Formation Capacity and Quaternary Ammonium Compounds Resistance — MANUEL ALEJANDRO VEGA-ITURBE, Angelica Godinez Oviedo, Jose Eduardo Lucero-Mejia, Jesús Alejandro Aldrete-Tapia, Montserrat Hernandez Iturriaga, Universidad Autonoma de Queretaro, Queretaro, QA, Mexico

P1-122 *Salmonella enterica* and *Listeria monocytogenes* Growth Kinetics during Rehydration of Dehydrated Corn and Subsequent Storage — MADHURI MATE, Pravalika Lingareddygari, Megan Fay, Joelle K. Salazar, Girvin Liggans, Illinois Institute of Technology, Institute for Food Safety and Health, Bedford Park, IL, USA

P1-123 Prevalence of Foodborne Pathogens in Food Products Acquired from Farmers' Markets in Central Virginia during COVID-19 Pandemic — CHYER KIM, Theresa Nartea, Ramesh Dhakal, Abeer Abujamous, Jung-lim Lee, Salina Parveen, Sadal Hwang, Daria Clinkscales, Virginia State University, Petersburg, VA, USA

P1-124 Characterization of Foodborne Pathogens Isolated from Select Fresh Produce Marketed in Food Desert Areas of Central Virginia — CHYER KIM, Sakinah Albukhaytani, Brian Goodwyn, Theresa Nartea, Eunice Ndegwa, Ramesh Dhakal, Virginia State University, Petersburg, VA, USA

P1-125 Molecular Characterization of Pathogenic *Escherichia coli* Associated with Street Vended Ready-to-Eat Fresh Produce in Lagos and Ogun States, Southwest Nigeria — Favour Okunbi, GABRIEL AKANNI, Olanrewaju E. Fayemi, Mountain Top University, Ibafo, Nigeria

P1-126 Characterization and Antimicrobial Resistant Profiles of *Salmonella* Species Associated with Ready-to-Eat Fresh Produce Sold in Open Markets of Lagos and Ogun States, Nigeria — Joy Anyasi, OLANREWAJU E FAYEMI, Gabriel Akanni, Mountain Top University, Prayer City, Nigeria

P1-127 Impact of Temperature, Concentration, and Contact Time on Bacterial Reduction in Surface Waters by Chlorine — LORETTA FRIEDRICH, Zeynal Topalcengiz, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P1-128 Antimicrobial Resistant *Escherichia coli and Enterococcus* spp. in Irrigation Water: Ponds, Creeks, and Streams in Small-Scale Produce Farms — AGNES KILONZO-NTHENGE, Abdullah Ibn Mafiz, Tobenna Aniume, Tennessee State University, Nashville, TN, USA

P1-129 Influence of Seepage Irrigation Systems on Microbial Water Quality — MARIA ALEJANDRA FELICIANO COLLADO, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

P1-130 Agricultural Water Microbial Baseline of Indicator Organisms and Produce Safety Assessments of Honduras Farm Exporting Produce to the U.S. Market — NADIRA ESPINOZA ROCK, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P1-131 Investigating the Prevalence of *Salmonella* and *E. coli* in Florida's Soil and Identifying Key Environmental Factors — CLARA DIEKMAN, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P1-132 Biological Soil Amendments of Animal Origin Extend the Survival of *Escherichia coli* in Soils in the Southeastern U.S. — KRISHNA PRABHA, Manan Sharma, Abhinav Mishra, Govindaraj Dev Kumar, Laurel Dunn, University of Georgia, Athens, GA, USA

P1-133 On-Farm Food Safety Practices Assessment in Texas — Alberto Beiza, Zhihong Lin, SUJATA A. SIRSAT, University of Houston, Houston, TX, USA

P1-134 Formation of *Listeria monocytogenes* Persister Cells in the Produce Processing Environment — XIRAN LI, Xavier F Hospital, Eva Hierro, Manuela Álvarez, Lina Sheng, Luxin Wang, University of California, Davis, Davis, CA, USA

P1-135 The Effect of Physico-Chemical Treatment in Reducing *Listeria monocytogenes* Biofilms on Lettuce Leaf — Md. Ashrafudoulla, Md. Furkanur Rahaman Mizan, Mevo S. I. Ulrich, SANG-DO HA, Chung-Ang University, Anseong, South Korea

P1-136 Isolation and Characterization of Two Specific Phages to Control *Pectobacterium carotovorum* subsp. *carotovorum* — YE-RIM PARK, Su-Hyeon Kim, Hyeju Jung, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

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P1-137 Efficacy of Silica Powders on Mortality and Progeny Production of the Lesser Grain Borer, Rhyzopertha Dominica (F.) (*Coleoptera: Bostrichidae)* — MANIVANNAN SELLADURAI, Subramanyam Bhadriraju, Kansas State University, Manhattan, KS, USA

P1-138 Survival of Generic *Escherichia coli* on Different Material Types of Tree Fruit Picking Bags — CYRIL NSOM AYUK ETAKA, Laura Strawn, Alexis M. Hamilton, Kim Waterman, Virginia Tech, BLACKSBURG, VA, USA

P1-139 Efficacy of Sanitizer Treatments in Simulated Dump Tank Water Against *Listeria monocytogenes* on Apples — YUAN SU, Xiaoye Shen, To Chiu, Tonia Green, Meijun Zhu, Washington State University, Pullman, WA, USA

P1-140 Impact of Gas Ultrafine Bubbles on the Efficacy of Commonly Used Antimicrobials for Apple Washing — PHOEBE UNGER, Amninder Singh Sekhon, Kabir Bhavnani, Andrew Galland, Girish Ganjyal, Minto Michael, Washington State University, Pullman, WA, USA

P1-141 Fates of *Listeria monocytogenes* on Waxed Apples and Brushes Contaminated during Wax Coating — XIAOYE SHEN, Yuan Su, Manoella Mendoza, Ines Hanrahan, Juming Tang, Meijun Zhu, Washington State University, Pullman, WA, USA

P1-142 Fates of *Listeria innocua* on Fuji Apples with Commercial Wax Coating — Yuan Su, XIAOYE SHEN, To Chiu, Zi Hua, Yuanhao Wang, Hongmei Zhu, Manoella Mendoza, Ines Hanrahan, Meijun Zhu, Washington State University, Pullman, WA, USA

P1-143 Effect of Conditioning and Storage Practices on 'Honeycrisp' Apple Interactions with *Salmonella enterica* and STEC Implications for Food Safety — CLAIRE L. HUDSON, Adam Hopper, Rachel M. Lipman, Macarena Farcuh, Shirley Micallef, University of Maryland, College Park, MD, USA

P1-144 Evaluating the Effect of the Plant Growth Regulator Retain® on 'Honeycrisp' Apple Association with *Listeria monocytogenes* and *Salmonella enterica* — CLAIRE L. HUDSON, Adam Hopper, Maya A. Kim, Macarena Farcuh, Shirley Micallef, University of Maryland, College Park, MD, USA

P1-145 Application of Atmospheric Cold Plasma (ACP) for *E. coli* O157:H7 Inactivation on Gala Apples — TOBENNA ANIUME, Agnes Kilonzo-Nthenge, Ankit Patras, Brahmaiah Pendyala, Tennessee State University, Nashville, TN, USA

P1-146 Evaluation of Nontoxigenic *Clostridium* spp. as Proteolytic *Clostridium botulinum* Surrogates for Growth Inhibition Challenge Studies — BRANDON J. WANLESS, Maxine Roman, Kristin Schill, Kathleen A. Glass, Food Research Institute, University of Wisconsin-Madison, Madison, WI, USA

P1-147 The Efficacy of Conventional Garden Spray, Electrostatic Spray, and Dip with a Peroxyacetic Acid and Hydrogen Peroxide Mixer to Inactivate *Listeria monocytogenes* on Apples — REBECCA STEARNS, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P1-148 Aggregative Bootie Cover Soil Sampling Shows Similar Indicator Bacteria Recovery Ability Compared to Grab Soil Sampling from Commercial Romaine Fields — JIAYING WU, Rachel Gathman, Jorge Quintanilla Portillo, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P1-149 Use of a Novel Ozonated Water Generation System to Reduce Surrogate *E. coli* on Leafy Greens — LORON PINNOCK BROWN, Erin Castelli, Marcos Sanchez Plata, Diego Casas, Texas Tech University, Lubbock, TX, USA

P1-150 Biomapping of Indicator Organisms in Controlled Environment Agriculture Vertical Hydroponic Leafy Greens Production Facility to Support Food Safety Management Systems — LORON PINNOCK BROWN, Marcos Sanchez Plata, Erin Castelli, Texas Tech University, Lubbock, TX, USA

Viruses and Parasites

P1-151 Endophytic Bacterial Communities Associated with Berries and Leafy Greens May Contribute to Enteric Virus Persistence — LAURENCE PÉLOQUIN, Coralie Goetz, Eric Jubinville, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-152 Prevalence of Hepatitis E Virus in Blueberries and Pork Liver Pâtés in Canada — EVA CHATONNAT, Kim Manseau-Ferland, Eric Jubinville, Valérie Goulet-Beaulieu, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-153 Significance of Human Norovirus and Hepatitis A Virus in Cranberries Harvested in Quebec — KIM MANSEAU-FERLAND, Eva Chatonnat, Eric Jubinville, Valérie Goulet-Beaulieu, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-154 Withdrawn

P1-155 Withdrawn

P1-156 Method Validation for the Recovery of Porcine Respiratory and Reproductive Virus, a Potential SARS-CoV-2 Surrogate, from Stainless Steel — JANAK DHAKAL, Jayesh Chaudhari, Khang Nguyen, Hiep Vu, Byron Chaves, University of Nebraska-Llincoln, Lincoln, NE, USA

P1-157 Method Development to Determine Virus Contamination in Soil Types Collected from U.S. Farms — EFSTATHIA (EFI) PAPAFRAGKOU, Qianru Yang, Food and Drug Administration, Laurel, MD, USA

P1-158 Combination of Paper Membrane-Based Filtration and Ultrafiltration for the Enhanced Detection of Foodborne Virus from Post-Washing Water — Zhaoqi Wang, Hyojin Kwon, Soontag Jung, Daseul Yeo, Sunho Park, Seoyoung Woo, Md. Iqbal Hossain, Ki-Hwan Park, Myeong-In Jeong, CHANGSUN CHOI, Chung-Ang University, Anseong, Gyeounggi, South Korea

P1-159 Residual Efficacy of Surface Sanitizing Wipes Against Two Pathogenic Bacteria, Human Norovirus, and Human Coronavirus — REBECCA GOULTER, Blanca Escudero-Abarca, Lee-Ann Jaykus, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

P1-160 Synergistic Inactivation of Tulane Virus, a Human Norovirus Surrogate, Using UV-a Light Radiation and Curcuminoid(s) from Natural and Synthetic Sources — XINHUI LI, Valeria Stepanova, University of Wisconsin-La Crosse, La Crosse, WI, USA

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P1-161 Efficacy of Ultraviolet-C Against Human Coronavirus 229E on Food Contact Surfaces and Foods — Eun Seo Choi, Eun Ji Lee, Sangha Han, Jeong Won Son, Seok-Woo Hyun, KYE-HWAN BYUN, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

P1-162 Inactivation of Foodborne Virus by Novel Organic Peroxyacids-Based Disinfectants — SIMON BOUCHARD, Eric Jubinville, Coralie Goetz, Patrick Marchand, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-163 Survival, Transfer and Evolution of Bacteriophage Phi6 as a Lipid-Coated Virus Surrogate — ATILA LIMA, Donald Schaffner, Rutgers University, New Brunswick, NJ, USA

P1-164 Transfer of Phi6 between Thumbpads and Surface Types Common to Food Service Environments — Adam Baker, SAHAANA CHANDRAN, Allyson Hamilton, Aurelie M. Poncet, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA

P1-165 Bacteriophage Phi6 as a Surrogate for SARS-CoV-2 Survival at Various Temperatures and Relative Humidities — SARAH CAIN, Don Schaffner, Rutgers University, New Brunswick, NJ, USA

P1-166 Persistence of Herpes Simplex Virus Type 1 on Non-Porous Surfaces — GABRIELLE PAGEAU, Marianne Levasseur, Eric Jubinville, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-167 Withdrawn

P1-168 Evaluation of a Laboratory Detection Method Using Sucrose Flotation to Concentrate *Cyclospora cayetanensis* Oocysts in Two Different Types of Soil — Alicia Shipley, Joseph Arida, SONIA ALMERIA, U.S. Food and Drug Administration, CFSAN, Office of Applied Research and Safety Assessment, Laurel, MD, USA

P1-169 Examination of Gaseous Chlorine Dioxide as a Sanitizer to Reduce *Cryptosporidium parvum* on Produce — KYLE MCCAUGHAN, Alyssa Kelly, Kalmia Kniel, University of Delaware, Newark, DE, USA

P1-170 Evaluation of Prevalence and Methods of Detection of *Cyclospora cayetanensis* in Irrigation Water in the United States — JESSICA HOFSTETTER, Amy Kahler, Anna Peterson, Travis Richins, David Jacobson, Joel Barratt, Andre Luiz Biscaia Ribeiro da Silva, Camila Rodrigues, Yvonne Qvarnstrom, Mia Mattioli, Chenega Enterprise Systems & Solutions, LLC (ChESS), Atlanta, GA, USA

P1-171 Comparative Evaluation of GENE-UP® *Campylobacter* Method for the Detection of *Campylobacter* Species in Ground Chicken and Chicken Carcass Rinse — Alexandra Tudor, LEO HORINE, John Mills, Ron Johnson, TEQ Analytical Labs, Denver, CO, USA

Water

P1-172 Presumptive *Cyclospora* Findings in Surface Waters — Alexander Studebaker, Michael Aaron, Rawane Raad, Lordwige Atis, YNES ORTEGA, University of Georgia, Griffin, GA, USA

P1-173 Persistence of *Cyclosporiasis* in Children from Regions of Morelia, Mexico — Guadalupe Orozco-Mosqueda, Andrea Huante-Campos, YNES ORTEGA, University of Georgia, Griffin, GA, USA

P1-174 Inactivation of the Norovirus Surrogate Bacteriophage MS2 on Glass Surfaces by Ozonized Water — Maria Mayara de Souza Grilo, Geany Targino de Souza Pedrosa, Fernanda Bovo Campagnollo, Donald Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P1-175 Emergence of Global Food Regulations to Combat Coronavirus Pandemic in Food Sector — MUHAMMAD SHAHBAZ, Muhammad Bilal, Shugufta Mohammad Zubair, Abdul Moiz, Mawarid Food Company, Riyadh, Saudi Arabia

P1-176 Zerovalent Iron Sand Filtration Markedly Reduces Water Contamination by Both Bacterial and Parasitic Contaminants — SEONGYUN KIM, Autumn Kraft, Valsin Fournet, Matthew Tucker, Mark Jenkins, Celia O'Brien, Jitender P. Dubey, Kalmia Kniel, Benjamin M. Rosenthal, Manan Sharma, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

P1-177 Prevalence and Genomic Analysis of *Listeria monocytogenes* in Chilean Surface Water — Angel Parra, Camila Solar, Magaly Toro, Andrea Moreno, Aiko Adell, Jianghong Meng, ANGELICA REYES-JARA, INTA, University of Chile, Santiago, Chile

P1-178 Dynamics, Serotypes, and Antimicrobial Resistance of *Salmonella* in a Karst Ground Water System — GETAHUN AGGA, Rachel Kaiser, Jason Polk, Marc Allard, U.S. Department of Agriculture-Agricultural Research Service, Bowling Green, KY, USA

P1-179 Isolation of *Salmonella* spp. from Surface Water Potentially Used for Produce Irrigation in the Metropolitan Region, Chile, 2021 — Leonela Diaz, Francisca Alvarez, Miguel Campos, Angelica Reyes-Jara, Aiko Adell, Andrea Moreno Switt, Jianghong Meng, MAGALY TORO, INTA, University of Chile, Santiago, Chile

P1-180 Efficacy of Ozone Against *Salmonella* Newport and *Escherichia coli* O157:H7 in Non-Traditional Sources of Water at Room Temperature and 4°C — RICHARD PARK, Libin Zhu, Govindaraj Dev Kumar, Sadhana Ravishankar, University of Arizona, Tucson, AZ, USA

P1-181 Isolation of Indicator and Foodborne Pathogenic Bacteria from Rainwater and Reverse Osmosis Reject Water Samples in Arizona — Libin Zhu, Huruy Zerzghi, Walter Betancourt, Manan Sharma, Shirley Micallef, Charles Gerba, Amy R. Sapkota, Amir Sapkota, Salina Parveen, Fawzy Hashem, Eric May, Kalmia Kniel, Mihai Pop, SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA

P1-182 The Application of Ultraviolet Light Technology to Enhance the Safety of Agricultural Water on Kansas Fresh Produce Farms — OLIVIA HALEY, Yeqi Zhao, Trevor Hefley, Manreet Bhullar, Kansas State University, Olathe, KS, USA

P1-183 Quantification of Survival and Persister Formation Among Shiga-Toxin Producing *E. coli* Strains in Water — DIMPLE SHARMA, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P1-184 Evaluation of Peroxyacetic Acid and Chlorine as Treatments for Surface Water Used in Produce Post Harvest — ZILFA IRAKOZE, Londa Nwadike, Don Stoeckel, Manreet Bhullar, Patrick Byers, Sara Gragg, Kansas State University, Manhattan, KS, USA

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P1-185 Prevalence and Antimicrobial Resistance of *E. coli* Isolated from Residential Water Wells in South Central Virginia between 2020 and 2021 — CHYER KIM, Queen Lee-Mayes, Margreth Minja, Abeer Abujamous, Karen Sismour, Edward Sismour, Virginia State University, Petersburg, VA, USA

P1-186 *Escherichia coli* Levels in Pond Water Vary by Sampling Location and Depth — JAMES WIDMER, Yakov Pachepsky, Matthew Stocker, Manan Sharma, Laurel Dunn, University of Georgia, Athens, GA, USA

P1-187 Comparing Agricultural Water Treatments on Total Coliforms in Irrigation Water and Soil — HARIS JEBRINI, Daniel Leskovar, Channah Rock, Alejandro Castillo, Texas A&M, College Station, TX, USA

P1-188 Withdrawn

P1-189 Evaluation of Sample Collection Time Periods for Improved Sensitivity of Wastewater-Based Epidemiology Surveillance — BRIENNA ANDERSON-COUGHLIN, Adrienne Shearer, Alexis Omar, Kyle McCaughan, Kalmia Kniel, University of Delaware, Newark, DE, USA

P1-190 Bacterial Communities Presence in Ten Natural Mineral Water Wells — Danilo Vilas Boas, Ana Carolina H. Ramos, Giancarlo P. Saraiva, Manuel Martinez, Rosalia Trias, Vinícius da Silva Duarte, Wilson Jose Fernandes Lemos Junior, ANDERSON SANT'ANA, University of Campinas, Campinas, Brazil

NOTES

TUESDAY POSTERS 8:30 A.M. – 6:15 P.M.

P2 POSTER SESSION 2

Antimicrobials
Communication Outreach and Education
Food Processing Technologies
Food Safety Systems
Laboratory and Detection Methods
Retail and Food Service Safety
Sanitation and Hygiene

Exhibit Hall

P2-01 through P2-87 – Authors present 10:00 a.m.– 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P2-88 through P2-189 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

Antimicrobials

P2-01 Antimicrobial Efficacy of Pullulan Coating Incorporated with Pecan Shell Extract and Its Effect on Quality of Blueberries during Storage — KARUNA KHAREL, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P2-02 Performance Evaluation of 3M™ Environmental Scrub Sampler with 10mL Wide Spectrum Neutralizer for the Recovery of Microorganisms in the Presence of Sanitizers Commonly Used in the Food and Beverage Industry — ROCIO FONCEA, Sailaja Chandrapati, 3M Food Safety, St Paul, MN, USA

P2-03 Distinct Microbiome Signatures in Mice Treated with Commonly Used Food Preservatives — RAVINDER NAGPAL, Nagaraju Indugu, Prashant Singh, Florida State University, Tallahassee, FL, USA

P2-04 Efficacy of Homemade Electrolyzed Water Sanitizer for Inactivation of Foodborne Pathogens — ASMA ELNAHAM, Hung King Tiong, University of West Alabama, Livingston, AL, USA

P2-05 Inactivation Efficacy of Plasma-Activated Water Against Mixed-Species Biofilms on Baby Spinach in Presence of Organic Matter — Manveen Kaur Ahuja, URVI B. SHAH, Qingyang Wang, Deepti Salvi, North Carolina State University, Raleigh, NC, USA

P2-06 Efficacy of Common Antimicrobial Interventions at and Above Regulatory Allowable Pick-Up Levels — SABRINA E. BLANDON, David A. Vargas, Diego Casas, Mark F. Miller, Carlos E. Carpio, Marcos Sanchez Plata, Jerrad F. Legako, Texas Tech University, Lubbock, TX, USA

P2-07 Sorbate Replacement in Cultured Dairy with Plant Extract and Fermentate Combination — CHRISTIE CHENG, Sarah Engstrom, Cynthia Rasmussen, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-08 Impact of Environmental Conditions and Cumulative Soiling on Antimicrobial Efficacy of Powdered Sanitizers over Time — RYAN SIMMONS, Janelle Howser, Sterilex, Hunt Valley, MD, USA

P2-09 Changes of Antimicrobial Activities of UV-C Irradiation as Affected by Types of Microorganisms and Abiotic Surfaces — DONGHYUN CHOI, Dohyun Kim, Jee-Hoon Ryu, Korea University, Seoul, South Korea

P2-10 Reduction of Microbial Indicator Bacteria in Beef Trimmings after Immersion in Lactic Acid (1-2%) vs. Citrilow (pH 1.2) as a Food Safety Intervention and Sequential Spraying with Ozonated Water (BioSafe) — ANGELICA SANCHEZ, Karla M. Rodriguez, David A. Vargas, Gabriela K. Betancourt-Barszcz, Onay Dogan, Marcos Sanchez Plata, Mark F. Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P2-11 Silk Polymeric Carriers Designed for Encapsulation of Essential Oils — YAGMUR YEGIN, Benedetto Marelli, Massachusetts Institute of Technology, Cambridge, MA, USA

P2-12 Inhibition of *Listeria monocytogenes* and *Clostridium botulinum* in Cooked, Uncured Meat Products Formulated with Citric Acid (CA) and Cultured Dextrose-Buffered Vinegar (CDV) — MAX GOLDEN, Brandon J. Wanless, Kristin Schill, Tiina Conklin, Jeannine Schweihofer, Kathleen A. Glass, Food Research Institute, University of Wisconsin-Madison, Madison, WI, USA

P2-13 *Listeria* Reduction and Elimination: Testing Results of Extreme Microbial Technologies Microbial Area Kleener (MAK9) — RANDY MOUNT, Extreme Microbial Technologies CEO, Dayton, OH, USA

P2-14 Broad-Spectrum Antimicrobials with Potential Food Applications Coproduced by *Bacillus velezensis* Osy-GA1 — MAKAYLA MANES, Ahmed Abdelhamid, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

P2-15 The Impact of Florfenicol Treatment on the Microbial Populations Associated with Live Catfish — HONGYE WANG, Lina Sheng, Xiran Li, Zhuosheng Liu, Sushumna Canakapalli, Yi Zhou, Chao Liao, Esteban Soto Martinez, Luxin Wang, University of California, Davis, Davis, CA, USA

P2-16 Survival of *Listeria monocytogenes* and *Salmonella* in Citrus Storage Waxes — Lina Sheng, HONGYE WANG, Linda J. Harris, Luxin Wang, University of California, Davis, Davis, CA, USA

P2-17 Genus-Level Microbial Community Profiling during Shelf Life of Raw Plant-Based Patties — SYDNEY STAFL, Shelly Gebert, Matt Hundt, Third Wave Bioactives, Wauwatosa, WI, USA

P2-18 Inhibition of *Clostridium perfringens* by Clean-Label Antimicrobials in a Model Meat System during Extended Cooling — DANIEL UNRUH, Max Golden, Brandon J. Wanless, Garrett McCoy, Kristin Schill, Kathleen A. Glass, Corbion, Lenexa, KS, USA

P2-19 Chemical Sanitizer's Effectiveness to Eliminate Planktonic and Sessile STEC, Spoilage and Lactic Acid Bacteria on Food Contact Surfaces — Kavitha Koti, Argenis Rodas Gonzalez, Kim Stanford, Celine Nadon, Xianqin Yang, Tim McAllister, CLAUDIA NARVAEZ BRAVO, University of Manitoba, Winnipeg, MB, Canada

P2-20 Combined Effects of Gaseous Organic Acid and Essential Oil in Inhibiting the Growth of *Bacillus cereus* — YUNSEO CHOI, Hyewon Yang, Jee-Hoon Ryu, Korea University, Seoul, South Korea

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P2-21 Antimicrobial Effect of *Ohelo* Berry (*Vaccinium calycinum*) on Pathogenic Bacteria in Whole Milk Compared with Cranberry *(Vaccinium macrocarpon)* — BIYU WU, Xiaohan Liu, Stuart Nakamoto, Yong Li, University of Hawaii at Manoa, Honolulu, HI, USA

P2-22 *Limosilactobacillus reuteri* Amoxicillin Resistance Differs as a Function of Strain Host — KATHERINE HIGGINS, Signe Branham, University of Wisconsin Madison, Madison, WI, USA

P2-23 Withdrawn

P2-24 Targeted Genome Mining Reveals the Psychrophilic *Clostridium estertheticum* Complex as a Potential Source for Novel Bacteriocins, Including Cesin A and Estercticin A — JOSEPH WAMBUI, Marc J.A. Stevens, Simon Sieber, Vincent Perreten, Roger Stephan, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

P2-25 Polyphenolic Compounds Isolated from Tea (*Camellia sinensis* (*L.*) O. Kuntze) Showed Antibacterial and Inhibitory Potential Against Cell Division Protein FtsZ of *Bacillus cereus* — Víctor Hugo González-Puente, Fumio Hashimoto, Kozue Sakao, De-Xing Hou, Luisa Solís-Soto, Norma Heredia, Santos Garcia, OMOTAYO OPEMIPO OYEDARA, Jorge Davila-Avina, Universidad Autonoma de Nuevo Leon, San Nicolás de los Garza, NL, Mexico

P2-26 Characterization of a Novel Anti-*Listeria* and Anti-*Campylobacter* Bactericidal Protein — PETER RUBINELLI, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P2-27 Inhibitory Effect of Aqueous Extracts of Commercial Pomegranate Products Against Enterohemorrhagic *Escherichia coli* — WEIFAN WU, Jinru Chen, Kevin Mis Solval, University of Georgia, Griffin, GA, USA

P2-28 Green Synthesis of Silver Nanoparticles Using *Terrabacter humi* sp. Nov. and Their Antimicrobial Activity and Mechanisms Investigation Against Foodborne Pathogens — MD. AMDADUL HUQ, Shahina Akter, Chung-Ang University, Anseong-si, South Korea

P2-29 Distribution of Antibiotic-Resistant *Escherichia coli* in the Brazilian Dairy Production Chain — MILIMANI ANDRETTA, Rafaela de Melo Tavares, Lara Maria Vieira Flores Carvalho, Caio Fialho de Freitas, Ricardo Seiti Yamatogi, Luís Augusto Nero, University of Viçosa - UFV, Viçosa, Brazil

P2-30 Using P100-Like Phage CKA15 to Degrade *Listeria monocytogenes* Mono-Species Biofilm Grown under Simulated Food Processing Conditions — STEVAN CUCIC, Timothy Ells, Cezar Khursigara, Hany Anany, University of Guelph, Guelph, ON, Canada

P2-31 Antimicrobial Activity of Citral Nanoemulsions Against *Listeria monocytogenes* in Fresh-Cut Papaya Stored at Different Temperatures — Winnie A. Luciano, Laura Salvia-Trujillo, Olga Martin-Belloso, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P2-32 A Novel Cultured Sugar Antimicrobial Controls *Listeria monocytogenes* in Deli-Style Turkey — Daniel Unruh, SARA LASUER, Tushar Verma, Luke Brown, Garrett McCoy, Corbion, Lenexa, KS, USA

P2-33 Powdered Vinegar Inhibits Growth of *Listeria monocytogenes* in Fully-Cooked Pork Sausage Stored Under Vacuum — Daniel Unruh, Tushar Verma, LUKE BROWN, Garrett McCoy, Corbion, Lenexa, KS, USA

P2-34 Withdrawn

P2-35 The Effects of *Ohelo* Berry (*Vaccinium calycinum*) Fractions on Growth Potential, Physicochemical Properties and Biofilm Formation of *Escherichia coli* O157:H7 — BIYU WU, Xiaohan Liu, Stuart Nakamoto, Yong Li, University of Hawaii at Manoa, Honolulu, HI, USA

P2-36 High-Throughput Screening of Essential Oils Against *Listeria monocytogenes* on Deli Ham — CRISTINA RESENDIZ-MOCTEZUMA, Matthew J. Stasiewicz, Michael Miller, University of Illinois at Urbana-Champaign, Champaign, IL, USA

P2-37 B-Cyclodextrins and Lipidic Dispersions as Encapsulating Vectors of Oregano (*Origanum vulgare* L.) Essential Oil: Characterization and Evaluation of Their Antimicrobial Activity Against *Listeria monocytogenes* in Broth and Model Food — Antonia Gounadaki, Dimitra Bozinaki, Irene-Dimitra Mesimeri, Georgia Moschopoulou, Spyridon Kintzios, PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece, Athens, Greece

P2-38 Biofilm Formation of Pathogenic *Listeria monocytogenes* and *Salmonella* Serovars and Non-Pathogenic *L. innocua* and *Salmonella* LT2 and Their Inactivation Using Industrial Antimicrobials — Jyothi George, Sadiye Aras, Sabrina Wadood, Niamul Kabir, Shahid Chowdhury, ALIYAR CYRUS FOULADKHAH, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

P2-39 Emergence of the Plasmid-Borne Mobile Colistin-Resistance Gene, *Mcr-1*, in *Escherichia coli* Isolated from Lebanese River Water Used in Irrigation — JOUMAN HASSAN, Issmat Kassem, University of Georgia, Griffin, GA, USA

P2-40 Stress Response and Survivability of *Listeria monocytogenes* Affected by Sublethal Concentrations of Bactericidal Antibiotics — KYE HWAN BYUN, Min Woo Choi, Sangha Han, Sang-Do Ha, Chung-Ang Univ., Ansung City, Republic of Korea

P2-41 *Escherichia coli* O157:H7 and *Listeria monocytogenes* Control on Blueberries by Chlorine Dioxide and Muscadine Grape Extract — ANGELICA ABDALLAH-RUIZ, Shecoya White, M. Wes Schilling, Juan Silva, Mississippi State University, Mississippi State, MS, USA

P2-42 Antibiotic Resistance Could Influence Lactic Acid Tolerance in Shiga-Toxin Producing *E. coli* — GOVINDARAJ DEV KUMAR, Ikechukwu Oguadinma, Abhinav Mishra, University of Georgia, Griffin, GA, USA

P2-43 Tolerance of Antibiotic-Resistant and Non-Resistant *Salmonella* Newport to Lactic Acid — GOVINDARAJ DEV KUMAR, Ikechukwu Oguadinma, Abhinav Mishra, University of Georgia, Griffin, GA, USA

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P2-44 Comparative Genomic Analysis of Virulence, Antimicrobial Resistance, and Plasmid Profiles of *Salmonella* Enteritidis Isolated from Humans in China — GUOJIE CAO, Shaohua Zhao, Dai Kuang, Chih-Hao Hsu, Lanlan Yin, Yan Luo, Zhao Chen, Xuebin Xu, Errol Strain, Patrick McDermott, Marc Allard, Eric Brown, Jianghong Meng, Jie Zheng, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P2-45 Investigation into Mechanism of Oil-Based Antimicrobial Compounds Against Desiccated *Salmonella* sp. — MRINALINI GHOSHAL, Lynne McLandsborough, University of Massachusetts, Amherst, MA, USA

P2-46 pH-Dependent Antimicrobial Potential of Plant-Derived Phenolic Acids Against *Salmonella* Typhimurium for Improving Efficacy and Reduction of Cytotoxicity — ZABDIEL ALVARADO-MARTINEZ, Debabrata Biswas, University of Maryland, College Park, MD, USA

P2-47 A Pipeline Approach for the Identification of *Salmonella* Bacteriophages with Tail Spike Proteins — BRIDGET XIE, Opeyemi Lawal, Valeria R. Parreira, Lawrence Goodridge, University of Guelph, Guelph, ON, Canada

P2-48 Multi-Year Analysis of *Salmonella* Isolates and Antimicrobial Resistance Trends in FSIS Sampling for the National Antimicrobial Resistance Monitoring System — GAMOLA FORTENBERRY, Catherine Rockwell, Tameru Berhanu, Jovita Haro, Labeed Ben-Ghaly, Sheryl Shaw, Uday Dessai, USDA Food Safety & Inspection Service, Washington, D.C., USA

P2-49 Seasonal Trends in Prevalence and Antimicrobial Resistance of *Salmonella* in Animals at Slaughter — EPIPHANIE NYIRABAHIZI, Amy Merrill, Cong Li, Heather Tate, U.S. Food and Drug Administration, Laurel, MD, USA

P2-50 Effect of Oregano Oil Nanoemulsion to Control *Salmonella* spp. on Alfalfa Seeds and Sprouts — SHIVANI ANTAAL, Kanika Bhargava, Hari Kotturi, University of Central Oklahoma, Edmond, OK, USA

P2-51 Phenotypic Antimicrobial Resistance Profile of *Salmonella* spp. Isolated from West Texas, Alabama, Georgia, and Mexico — ANGELA PERDOMO REYES, Emily Delgado, Alexandra Calle, Texas Tech University, Lubbock, TX, USA

P2-52 Reduction of *Salmonella* and STEC by Citrilow Spray and Dip Treatments on Chilled Beef Trim — REAGAN JIMENEZ, Mindy Brashears, David A. Vargas, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

Communication Outreach and Education

P2-53 Farm Readiness for Produce Safety Rule Inspections: Review of On-Farm Readiness Review Data from 2018–2021 — MARI SCHROEDER, Bob Ehart, Elizabeth Bihn, Christopher Gunter, Wesley Kline, Phillip Tocco, Michelle Danyluk, Meredith Melendez, University of Florida CREC, Lake Alfred, FL, USA

P2-54 Systematic Review, Meta-Analysis and Thematic Synthesis of Virtual Food Safety Trainings and Education — ZACHARY BERGLUND, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P2-55 Thermometer Use When Grilling Meat Products in a Consumer Test Kitchen — ELLEN SHUMAKER, Lisa Shelley, Sheryl Cates, Rebecca Goulter, Jaclyn Merrill, Catherine Sander, Lydia Goodson, Brian Chesanek, Aaron Lavallee, Lee-Ann Jaykus, Benjamin Chapman, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

P2-56 Do Celebrity Chef-Endorsed Food Safety Messages in Recipes Improve Consumer Food Safety Practices? Findings from an Observation Study — ELLEN SHUMAKER, Lisa Shelley, Sheryl Cates, Rebecca Goulter, Jaclyn Merrill, Catherine Sander, Lydia Goodson, Brian Chesanek, Aaron Lavallee, Lee-Ann Jaykus, Benjamin Chapman, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

P2-57 Risks for Outbreak of *Listeria monocytogenes* Infections Associated with Frozen Corn Consumption in Japan — YUKO KUMAGAI, Shiori Uchiyama, Hiroshi Asakura, Wayo Women's University, Ichikawa-City, Japan

P2-58 An Evaluation of Produce Safety Rule Resources for Website Accessibility, Readability, and Content Quality — NICOLE ARNOLD, Minh Duong, Tiffany Drape, Benjamin Chapman, Laura K. Strawn, Robert Williams, Renee Boyer, East Carolina University, Greenville, NC, USA

P2-59 Content Analysis of Online Tree Nut Recipes: Soaked Nuts and Nut-Based Dairy Alternatives — MAEVE SWINEHART, Linda J. Harris, Hanna Louvau, Yaohua Feng, Purdue University, West Lafayette, IN, USA

P2-60 Consumer Practices of Homemade Nut-Based Dairy Alternatives and Soaked Nuts— MAEVE SWINEHART, Linda J. Harris, Nathan Anderson, Yaohua Feng, Purdue Univ-ersity, West Lafayette, IN, USA

P2-61 Food-Handling Practices of Apple Drying in Home Kitchens: A Survey — MEGAN MEI YEE LOW, Robert Scharff, Juming Tang, Elizabeth Grasso-Kelley, Bradley Marks, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P2-62 Risk Management Practices of North Carolina Animal Agritourism Operations — CATHERINE GENSLER, Megan E. Jacob, Benjamin Chapman, Department of Agricultural and Human Sciences, CALS, NCSU, Raleigh, NC, USA

P2-63 Incorporating Celebrity Chef Endorsed Food Safety Messages into Recipes for Meal Preparation in Consumer Kitchens and Their Influence on Cross-Contamination to Kitchen Surfaces during Meal Preparation — EMILY KINGSTON, Rebecca Goulter, Jason Frye, Lisa Shelley, Lydia Goodson, Jaclyn Merrill, Catherine Sander, Brian Chesanek, Ellen Shumaker, Sheryl Cates, Aaron Lavallee, Benjamin Chapman, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P2-64 Development and Implementation of a Hands-On Food Safety and Regulatory Curriculum for Members of Shared-Use Commercial Kitchens in Florida — MATTHEW KRUG, Imran Ahmad, Jennifer Hagen, Sarah Ellis, Sebastian Galindo, University of Florida, Immokalee, FL, USA

P2-65 Perceptions of 'Invulnerability', 'Optimistic Bias', 'Illusion of Control', and 'Superiority Bias' Regarding Food Safety Risks Among Lebanese Consumers — ELLEN EVANS, Elizabeth C. Redmond, Nisreen Alwan, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

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Green Text – Undergraduate Student Competitor

P2-66 Utilzing the 'Safe Recipe Style Guide' to Assess Food Safety Communication in Chicken Salad YouTube Video-Recipes — NAOMI MELVILLE, Ruth Fairchild, Ellen Evans ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P2-67 Understanding Food Safety Training Barriers Among Hmong Farmers in the U.S. — PEI LIU, Touria Eaton, Maria Rodriguez-Alcala, University of Missouri-Columbia, Columbia, MO, USA

P2-68 The Year-Long Effect of COVID-19 on Food Safety: Consumer Practices and Perceptions Using Longitudinal Consumer Surveys and Focus Groups — Merlyn Thomas, YAOHUA (BETTY) FENG, Purdue University, West Lafayette, IN, USA

P2-69 Did COVID-19 Change How We Do Things? Critical Violation of the Restaurants in Louisiana before and during the Pandemic — MELISSA CATER, Rebecca Gravois, Trista Danos, Wenqing (Wennie) Xu, Louisiana State University AgCenter, Department of Agricultural and Extension Education & Evaluation, Baton Rouge, LA, USA

P2-70 Supporting Master Food Preserver Volunteers during COVID-19 through Hybrid Food Safety Training — THAIS RAMOS, Erin DiCaprio, University of California, Davis, Davis, CA, USA

P2-71 Assessment of Elderberry/Elderflower Post-Harvest and Processing Practices to Inform Extension Food Safety Education Products — THAIS RAMOS, Gwenael Engelskirchen, Gail Feenstra, Erin DiCaprio, University of California, Davis, Davis, CA, USA

P2-72 Enhancing Fermentation Nutrition and Food Safety Extension Education Utilizing Online Platforms — THAIS RAMOS, Maria Marco, Erin DiCaprio, University of California, Davis, Davis, CA, USA

P2-73 Work-Based Learning is Effective Tool for Training People with Significant Cognitive Disabilities or Autism Spectrum Disorder — CHRISTY MENDOZA, Chip Rowan, Alabama Extension, Gadsden, AL, USA

P2-74 Florida's Extension Programs Prepare Produce Growers for Produce Safety Rule Inspection — TAYLOR O'BANNON, Matthew Krug, Renee Goodrich, Michelle Danyluk, Chelsea Peebles, Kirby Quam, University of Florida CREC, Lake Alfred, FL, USA

P2-75 Evaluation of the Southern Center for FSMA Training and Lead Regional Coordination Center — KATELYNN STULL, Keith Schneider, Renee Goodrich, Amy Harder, Sydney Whitehurst, Matthew Krug, Taylor Langford O'Bannon, Armitra Jackson-Davis, Lamin Kassama, Duncan Chembezi, Elizabeth Myles, Amanda Philyaw Perez, Kristin Woods, Chad Carter, Julie Northcutt, Kimberly Baker, Keawin Sarjeant, Ramkrishnan Balasubramanian, Laurel Dunn, Paul Priyesh Vijayakumar, Melissa Newman, Achyut Adhikari, Kathryn Fontenot, Juan Silva, Joy Anderson, Christopher Gunter, Elena Rogers, Otto D. Simmons III, Lynette Johnston, Karen McSwain, Ravirajsinh Jadeja, Divya Jaroni, Lynette Orellana-Feliciano, Maria Plaza, Annette Wszelaki, Mark Morgan, Aliyar Cyrus Fouladkhah, Thomas Taylor, Alejandro Castillo, Joseph Masabni, Barrett Vaughan, Fatemeh Malekian, Laura Strawn, Amber Vallotton, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P2-76 Assessing Knowledge Gained from Produce Safety Alliance Grower Trainings Administered by the Southern Center for FSMA Training — ALAN GUTIERREZ, Mari Schroeder, Amy Harder, Kate Shoulders, Kristin Woods, Amanda Philyaw Perez, Laurel Dunn, Christopher Gunter, Lynette Johnston, Elena Rogers, Chip Simmons, III, Paul Priyesh Vijayakumar, Casey Newcomb, Chad Carter, Thomas Taylor, Alejandro Castillo, Juan Anciso, Joseph Masabni, Laura Strawn, Amber Vallotton, Michelle Danyluk, Keith Schneider, University of Florida, Gainesville, FL, USA

P2-77 How Food Processors are Responding to Regulatory and Environmental Changes — ROBERT FERGUSON, Stacy Atchison, Food Safety Magazine, State College, PA, USA

P2-78 Home-Canning: Preliminary Results of Electric Pressure Cookers for Canning Low-Acid Foods — KAITLYN CASULLI, Carla Schwan, Rohan Tikekar, Shauna Henley, Michigan State University, East Lansing, MI, USA

P2-79 Analyzing Virtual Platform Effectiveness to Interact with Produce Safety Stakeholders — ALEXIS M. HAMILTON, Michelle Danyluk, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

Food Processing Technologies

P2-80 Inactivation of *Listeria innocua* in Raw Cashew Milk Treated with High Pressure Processing (HPP) — RACHEL COGGINS, Philip Johnson, Mary-Grace Danao, University of Nebraska Lincoln, Lincoln, NE, USA

P2-81 Impact of Surface Topography and Shear Stress on Single and Dual Species Biofilm Formation by *Listeria monocytogenes* in Presence of Promotor Bacteria — GRISHMA PRABHUKHOT, Hsin-Bai Yin, Charles D. Eggleton, Jitendra Patel, University of Maryland, Baltimore County, Baltimore, MD, USA

P2-82 Screening of *Listeria monocytogenes* Strains for Blanching Validation — ALVIN LEE, Nicole Maks, Karolina Piszczor, Brittany Swicegood, Malavika Sinha, Lory Reveil, Sanjay Gummalla, Institute for Food Safety and Health, Bedford Park, IL, USA

P2-83 Validation of *Salmonella* Typhimurium MHM112 as a Surrogate for Inactivation of Pathogenic *Salmonella* Using Plasma-Activated Water — URVI SHAH, Jay Jackson, Qingyang Wang, Sophia Kathariou, Deepti Salvi, North Carolina State University, Raleigh, NC, USA

P2-84 Impact of Natural and Probiotic Fermentation on Anti-Nutrient Factors (ANFs) and Antioxidant Contents in Legumes and Cereals — AMA ADADZEWA ESHUN, Armitra Jackson-Davis, Judith Boateng, Alabama A&M University, Normal, AL, USA

P2-85 Advancements in UV Treatment of Highly Opaque Fluids: Evaluation of Microbial UV Sensitivity (D_{10} Value) in Skim Milk — BRAHMAIAH PENDYALA, Pranav Vashisht, Ankit Patras, Tennessee State University, Nashville, TN, USA

P2-86 Inactivation Strategy for Reduction of Microorganisms during Rice Cakes Manufacturing Process — Sangha Han, Kyeongjun Kim, KYE-HWAN BYUN, Jun-Ha Park, Song-yi Choi, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

TUESDAY

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P2-87 Monitoring of Rice Cakes Manufactured by Small-Scale Business in Korea — Sangha Han, Kyeongjun Kim, KYE-HWAN BYUN, Duk-Hyun Kim, Song-yi Choi, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

Food Safety Systems

P2-88 Effect of Different Environmental Stresses on Foodborne Pathogens Response to Select Chemical Treatments — Amandeep Singh, Arianna Hernandez, VEERACHANDRA YEMMIREDDY, University of Texas Rio Grande Valley, Edinburg, TX, USA

P2-89 Statistical Process Control Using Microbial Indicators in a Commercial Beef Processing Facility — KARLA M. RODRIGUEZ, David A. Vargas, Onay Dogan, Gabriela K. Betancourt-Barszcz, Marcos Sanchez Plata, Mindy Brashears, Mark F. Miller, Texas Tech University, Lubbock, TX, USA

P2-90 Withdrawn

P2-91 Efficacies of Ascaroside Treatment in the Control of *Salmonella enterica* on Alfalfa and Fenugreek Seeds and Sprouts — XUEYAN HU, Seulgi Lee, Murli Menohar, Jinru Chen, University of Georgia, Griffin, GA, USA

P2-92 Impact of Incorporating *Salmonella* Serotype into FSIS' Performance Standards — PETER EVANS, USDA-FSIS, Washington, D.C., USA

P2-93 *Listeria monocytogenes* at the Food-Environment Interface: The African Perspective — Thulani Sibanda, Ihab Habid, Patrick Murigu Kamau Njage, Victor Ntuli, Angela Parry-Hanson Kunadu, Swaleha Hudaa Neetoo, Ranil Coorey, ELNA BUYS, University of Pretoria, Pretoria, South Africa

P2-94 Biomapping of *Enterobacteriaceae* Counts and Aerobic Plate Counts Using Hygiena's Microsnap™ throughout a Poultry Processing Facility — VALERIA LARIOS, David A. Vargas, Diego Casas, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-95 Withdrawn

P2-96 Withdrawn

P2-97 ISO Validation for Pathogen Detection in Food and Environmental Samples Utilizing the Hygiena™ Food-Proof *Listeria* Genus Plus *Listeria monocytogenes* Multiplex PCR Assay — Hanna Hartenstein, Stefanie Wendrich, Maryse Rannou, Sarah Peron, Lila Lefebvre, APRIL ENGLISHBEY, Astrid Grönewald, Cordt Grönewald, Hygiena, New Castle, DE, USA

P2-98 Development and Validation of Hygiena™ Real-Time PCR Assay for the Detection and Identification of Coagulase Positive *Staphylococcus* Species and *S. aureus* — Matthias Giese, Astrid Grönewald, Carola Stieler, Florian Priller, Bianca Kinnemann, Barbara Restel, APRIL ENGLISHBEY, Cordt Grönewald, Hygiena, New Castle, DE, USA

P2-99 Validation of the Hygiena™ foodproof® *Enterobacteriaceae* Plus *Salmonella* Detection PCR Kit Compared to ISO Reference Methods for Infant Cereals, Infant Formula with or without Probiotics and Ingredients, and Production Environmental Samples — Hanna Hartenstein, Stefanie Wendrich, Maryse Rannou, Lizaig Gouguet, Florian Quero, APRIL ENGLISHBEY, Matthias Giese, Cordt Grönewald, Hygiena, New Castle, DE, USA

P2-100 Validation of the Hygiena™ foodproof® *Salmonella* Genus Plus Enteritidis and Typhimurium PCR Kit for Raw and Ready-to-Cook Meat and Poultry Products and Environmental Samples — Stefanie Wendrich, Hanna Hartenstein, Suzanne Jordan, Victoria Davis, Sophie Warren, APRIL ENGLISHBEY, Anne Rölfing, Cordt Grönewald, Hygiena, New Castle, DE, USA

P2-101 Combined Effects of UV-C and Superheated Steam on Inactivation of *Enterococcus faecium* and *Geobacillus stearothermophilus* Spores on Stainless Steel: Influence of Food Residue — HYEON WOO PARK, Abigail B. Snyder, VM Balasubramaniam, The Ohio State University, Columbus, OH, USA

P2-102 Validating Commercial-Scale Dry-Roasting Process for Hazelnuts Using *Enterococcus faecium*: Critical Limits Depend on Roaster Design — Samantha Burroughs, HUSSEIN MOHAMED, Joy Waite-Cusic, Oregon State University, Corvallis, OR, USA

P2-103 Combining Postbiotic Metabolites (*Lactiplantibacillus plantarum* [M.21]) with Eugenol and Thymol Against Pathogenic Microbial Biofilms on Food-Processing Surfaces and MBEC™ Biofilm Device — Sazzad Hossen Toushik, Jun-Ha Park, Md. Furkanur Rahaman Mizan, Kyeongjun Kim, SANG-DO HA, Advanced Food Safety Research Group, Chung-Ang University, Anseong, Gyeonggi-do, South Korea

P2-104 Inhibition of Biofilm Formation, Quorum Sensing Signaling, and Virulence Genes of Foodborne Pathogens *Salmonella* Typhimurium and *Escherichia coli* Using Flavourzyme — Shamsun Nahar, Ah Jin Cho, Her Eun, A.G.M.Sofi Uddin Mahamud, SANG-DO HA, Chung-Ang University, Anseong, South Korea

P2-105 Exposure to Protective Culture *Hafnia alvei* Attenuates *Salmonella* Virulence in Food and Intestinal Models — Sulaiman Aljasir, DENNIS D'AMICO, University of Connecticut, Storrs, CT, USA

P2-106 Assessment of Food Safety Culture in Food Production and Finished Goods Warehouse Facilities in a Low-Risk Food and Drink Manufacturer — Laura Hewitt, Arthur Tatham, Paul Hewlett, DAVID LLOYD, Elizabeth C. Redmond, Cardiff Metropolitan University, Cardiff, South Wales, United Kingdom

P2-107 Antimicrobial Activity of a Photocatalytic Titanium Dioxide-Coated Stainless Steel — Eduardo Torres Domínguez, Liang Mao, FNU CHENGGEER, Azlin Mustapha, Heather Hunt, Mathew Maschmann, University of Missouri, Columbia, MO, USA

P2-108 Persistence of *Salmonella* Javiana and *Listeria* spp. in Hydroponic Nutrient Solution at Different Temperatures — GAYATRI RAJASHEKHAR DHULAPPANAVAR, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA

P2-109 Use of an *Escherichia coli* Pilin Gene (*tra*A) to Identify Human Fecal Contamination — LIANG MAO, Guolu Zheng, Azlin Mustapha, University of Missouri, Columbia, MO, USA

P2-110 Bio-Mapping of *Salmonella* Levels in Two Commercial Poultry Processing Facilities to Establish Statistical Process Control Parameters, Assess the Performance of Antimicrobial Intervention Schemes and Implement Risk-Based Food Safety Management Decisions — DANIELA CHAVEZ-VELADO, David A. Vargas, Juan DeVillena, Mindy Brashears, Marcos Sanchez Plata, Texas Tech, Lubbock, TX, USA

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P2-111 Patented Organic Peracetic Acid and Hydrogen Peroxide-Based Sanitizing Solution Achieves >5 Log CFU/g Reduction in *Salmonella* Surrogate *Enterococcus faecium* NRRL B-2354 on Brazil Nuts at an Industrial Scale — Fadi Dagher, Pooneh Peyvandi, ASHLEY CLOUTIER, Goze Aliefendioglu, Jay Pandya, Rebecca Karen Hylton, Amir Hamidi, Agri-Neo Inc., Toronto, ON, Canada

P2-112 Validation and Reproducibility of a Quantitative Survey of Correlation between Operating Conditions and Food Safety in Child Development Centers — LEIDYS ESPITIA-NOVOA, Nayra Alvarino-Molina, Universidad del Sinú - Elías Bechara Zainúm, Monteria, Colombia

Laboratory and Detection Methods

P2-113 Independent Laboratory Study for the GENE-UP® Pathogenic *Escherichia coli* Method — ERIN CROWLEY, Benjamin Bastin, Joe Benzinger, Kateland Koch, Wesley Thompson, Q Laboratories, Cincinnati, OH, USA

P2-114 Combining Hollowfiber Concentration with the Automated Liquid Crystal Detection Technology for Detection of Shiga Toxin Producing *Escherichia coli* — Shuang Wu, ALEXANDRA PAULLET, Noah Zink, Curtis Stumpf, Gary Niehaus, Crystal Diagnostics, Rootstown, OH, USA

P2-115 Multi-Laboratory Validation Study of a Real-Time Quantitative PCR Method for Detection of *Salmonella* in Baby Spinach — Kaiping Deng, Hua Wang, SHANNON KIENER, Emily Smith, Shizhen Wang, Kai-Shun Chen, Ruiqing Pamboukian, Anna Laasri, Catalina Pelaez, Jodie Ulaszek, Matthew Kmet, Thomas Hammack, Ravinder Reddy, U.S. Food and Drug Administration – CFSAN, Bedford Park, IL, USA

P2-116 Rapid Detection of *Salmonella enterica* in Fresh Produce by a Novel Microarray-Based PathogenDx System — HSIN-BAI YIN, Chi-Hung Chen, Benjamin Katchman, Cory Newland, Michael Tomchaney, Peaches Ulrich, Shayla Freeman, Melissa May, Rick Eggers, Kevin O'Brien, Michael Hogan, Jitendra Patel, U.S. Department of Agriculture – ARS, Beltsville, MD, USA

P2-117 Cold Stress Growth and Population Dynamics of *Escherichia coli* in Leafy Greens Using Real-Time PCR and Whole Genome Sequencing — Andrzej A. Benkowski, Daniel DeMarco, Megan Brown, Joelle Mosso, J. DAVID LEGAN, Erica Miller, Ariel Fuertes, Mary Thao, Douglas Marshall, Eurofins Microbiology Laboratories, Madison, WI, USA

P2-118 Evaluation of the Phagedx™ *Salmonella* Assay for the Detection of *Salmonella* in Lettuce — YUTONG WANG, Carlos Leon-Velarde, Iris Pyne, Lawrence Goodridge, University of Guelph, Guelph, ON, Canada

P2-119 Comparison of RNA Isolation Methods for *Escherichia coli* O157:H7 Inoculated on Fresh-Cut Romaine Lettuce — VICTOR JAYEOLA, Tom Jurkiw, Jie Zheng, Maria Hoffmann, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P2-120 Determination of Antifouling Capabilities of Silane-Treated Wood — ZACHARIAH VICE, William DeFlorio, Matthew Taylor, Mustafa Akbulut, Texas A&M University, College Station, TX, USA

P2-121 Evaluation of Hygiena's BAX® Real-Time PCRA ssays for Detection of *Salmonella* spp. and STEC in Cannabis Flower and Hemp Flower for AOAC Research Institute's *Performance Tested Methods*℠ Certification — NISHA CORRIGAN, Alexandra Tudor, Leo Horine, Casey Simmons, Hygiena, New Castle, DE, USA

P2-122 A Comparison of Methods for Recovery of Shiga Toxin-Producing *Escherichia coli* from Agricultural Soils — ANNE-LAURE MOYNE, Julie Kase, Susan Leonard, Peiman Aminabadi, Edward R. Atwill, Cassandra Champ, David W. Lacher, Mark Mammel, Michele Jay-Russell, Linda J. Harris, Western Center for Food Safety, University of California, Davis, CA, USA

P2-123 A Comparison of Methods for Recovery of *Salmonella* from Agricultural Soils — ANNE-LAURE MOYNE, Padmini Ramachandran, Peiman Aminabadi, Rebecca Bell, Edward R. Atwill, Christopher Grim, Michele Jay-Russell, Linda J. Harris, Western Center for Food Safety, University of California, Davis, CA, USA

P2-124 Identification of Animal and Plant Species in Food-Based Products Using Next Generation Sequencing: Results from an Interlaboratory Study — MARIO GADANHO, Nicole Prentice, Tiina Karla, Milja Tikkanen, Hanna Lehmusto, Cristina Barbosa, Sofia Pires, Franck Pandiani, Rita Alberty, Tiago Machado, Isabel Mâncio, Manuela Sol, Maelle Prorok-Hamon, Marika Ramassamy, Julien Gernigon, Paola De Santis, Ugo Marchesi, Daniela Verginelli, Katia Spinella, Bianca Maria Varcasia, Roberta Pellesi, Michele Suman, Geoffrey Cottenet, Carine Blancpain, Anne-Catrin Geuthner, Ralf Reiting, Anke Rullman, Stefanie Dobrovolny, Rupert Hochegger, Lotte Hougs, Birgitte Nauerby, Ines Vazquez, Chris Conyers, Edward Haynes, Thermo Fisher Scientific, Basingstoke, United Kingdom

P2-125 Detection of *Listeria monocytogenes* and *Salmonella* spp. in Plant-Based Foods — JENNIFER PELOWITZ, Joshua Whitworth, Mike Clark, Astrid Cariou, Bio-Rad Laboratories, Hercules, CA, USA

P2-126 Crystal Diagnostics Xpress™ E7 STEC Test Kit AOAC Performance Tested Method℠ (PTM 011502) for *Escherichia coli* Big Six, and O157 in Fresh Raw Ground Beef, Fresh Raw Beef Trim, Raw Spinach, Romaine Lettuce, and Spring Mix Greens — SHUANG WU, Curtis Stumpf, Luana Tortora, Gary Niehaus, Crystal Diagnostics Ltd., Rootstown, OH, USA

P2-127 Comparative Evaluation of GENE-UP® *Campylobacter* Method for the Detection of *Campylobacter* Species in Select Poultry Matrices — Deborah Briese, Vikrant Dutta, Adam Joelsson, JOHN MILLS, Marie Bugarel, Ron Johnson, Patrick Bird, bioMérieux, Inc., Hazelwood, MO, USA

P2-128 An Evaluation of the GENE-UP® Pathogenic *E. coli* (PEC) Method to Detect Pathogenic *E. coli* Species in Ground Beef (375g), Beef Trim (375g), Bagged Romaine Lettuce (375g) and Microtally™ Sampling Cloths (200ml) — Deborah Briese, JOHN MILLS, Vikrant Dutta, Patricia Rule, Michelle Keener, Jada Jackson, Marie Bugarel, Fabienne Hamon, Ron Johnson, Patrick Bird, bioMérieux, Inc., Hazelwood, MO, USA

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P2-129 Next Generation Enrichment for Accelerated, Same-Day Pathogen Detection in Produce and Trim — JAVIER ATENCIA, Ethan Reggia, Heidi Leonard, Pathotrak Inc., College Park, MD, USA

P2-130 Detection of *Listeria monocytogenes* in Raw Dairy, Meat and Seafood Commodities Utilizing Alternative Proprietary Selective Enrichment Media and Loop-Mediate Isothermal Amplification (LAMP)-Bioluminescent Assay — GABRIELA LOPEZ VELASCO, Sebastian Antoń, Christina Barnes, Jean-Francois David, Micki Rosauer, Sandra Rogoza, Sergiy Olishevskyy, 3M Food Safety, St. Paul, MN, USA

P2-131 Rapid Detection of *Salmonella* spp. in Alkaline Primary Production Boot Swabs Using the Loop-Mediated Isothermal Amplification (LAMP) Assay – Bioluminescent — Vanessa Tsuhako, Thiago Santos, Beatriz Rosa, Laura Bragil, GABRIELA LOPEZ VELASCO, 3M Food Safety, St. Paul, MN, USA

P2-132 Evaluation of a Loop-Mediated Isothermal Amplification (LAMP)-Bioluminescent Assay for Rapid Detection of *Salmonella* in Protein Industry as Compared to the Cultural Method — Yan Huang, Jingzhang Lv, Li Tang, Qi Wang, Wenxia Guan, Xiaomei Gao, GABRIELA LOPEZ VELASCO, 3M Food Safety, St. Paul, MN, USA

P2-133 Development and Validation of High-Resolution Melting Assays for the Detection of Potentially Virulent Strains of *Escherichia coli* O103 and O121 — FRANK VELEZ, Joseph Bosilevac, Sabine Delannoy, Patrick Fach, Prashant Singh, Florida State University, Tallahassee, FL, USA

P2-134 A Novel Real-Time PCR Approach for Specific Detection and Estimation of *Salmonella* in Poultry Rinse — Prashant Singh, FRANK VELEZ, Joseph Bosilevac, Florida State University, Tallahassee, FL, USA

P2-135 Validation of Reduced Time to Detection of Shiga-Toxigenic *Escherichia coli* in Beef Trim with an Improved Sampling Device — Daniel DeMarco, ERICA MILLER, Elliot Gagnon, Luke Anderson, Dustin DeLoach, Joelle Mosso, Douglas Marshall, J. David Legan, Eurofins Microbiology Laboratories, Louisville, KY, USA

P2-136 Performance Evaluation of a Loop-Mediated Isothermal Amplification (LAMP) - Bioluminescent Assay for Rapid Detection of Shiga Toxin-Producing *E. coli* (STEC) in Raw Beef from Brazilian Meat Processing Facility — DAIANE MARTINI, Vanessa Tsuhako, Lidiane Moreira Gomes Barreira Macedo, Danielle Almeida, Carlos Henrique Tersarotto, Gabriela Lopez Velasco, 3M, Chapecó, SC, Brazil

P2-137 Evaluation of GENE-UP® EHEC Method on Environmental and Beef Samples: A Study Comprising Brazilian Samples — FELIPE ZATTAR, Fábio Graciano, Belisa França, Carlos Henrique Tersarotto, Jana Sioufi, Vikrant Dutta, bioMérieux Brasil, São Paulo, Brazil

P2-138 Development and Verification of *Salmonella* Quantification on Beef Lymph Nodes Utilizing the Hygiena's BAX® System Salquant™ — GABRIELA K. BETANCOURT-BARSZCZ, David A. Vargas, Savannah Applegate, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-139 Development and Verification of a *Salmonella* Quantification Methodology for Beef Ceca Swabs and Ceca Contents Utilizing Hygiena's BAX® System Salquant™ — ROSSY BUENO LOPEZ, Gabriela K. Betancourt-Barszcz, David A. Vargas, Angelica Sanchez, Savannah Applegate, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-140 Development and Verification of *Salmonella*, *Vibrio*, *Campylobacter*, *Escherichia coli*, and *Listeria* spp. Pure Culture Estimations Utilizing Hygiena's PCR-Based Quantification Methodologies — Savannah Applegate, ROSSY BUENO LOPEZ, April Englishbey, Tyler Stephens, Stacy Stoltenberg, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-141 *Salmonella* Quantification (SalQuant™) Utilizing the BAX® System for Pork Primary Production Boot Cover Samples — JIMENG BAI, Sara Gragg, Erin Fashenpour, Tyler Stephens, Savannah Applegate, Kansas State University, Manhattan, KS, USA

P2-142 Evaluation of Lamp-Based Amplification and Bioluminescence Detection Method for Detection *of Salmonella* spp. in Raw Pork Meat — ANGÉLICA DE LA TORRE, Erandy Cabello, Ricardo Cervantes, Gustavo Gonzalez, Marisela Hernandez, Martha Mezo, Carlos Castro, 3M México, Ciudad De México, Mexico

P2-143 *Salmonella* Quantification in Pork Lymph Nodes Using Different Methodologies — DAVID A. VARGAS, Gabriela Betancourt-Barszcz, Sara Gragg, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-144 Evaluation of an Alternative Method for Enumeration of the Total Viable Count in Cooked Sausages — Fei Luo, Xiaoli Hu, Shuxia Wang, Yongjun Zang, HANG WANG, Jianwei Huo, Dong Liu, Jianguang Zhang, Alec Teagarden, 3M Food Safety, 3M China Ltd., Shanghai, China

P2-145 Comparative Study on *E. coli* Tests between Alternative Method, TBX Agar and Japan's Fecal Coliform Test in Raw Meat Samples — Yuji Kanai, Takayuki Suda, ALEC TEAGARDEN, 3M Food Safety, St. Paul, MN, USA

P2-146 Evaluation of Hygiena BAX® System Real-Time PCR Assay for *E. coli* O157:H7 Exact in Raw Meats — CARLOS LEON-VELARDE, Saleema Saleh-Lakha, Nathan Larson, Ryan Lee, Nisha Corrigan, Kathy Wilson, Agriculture and Food Laboratory (AFL), University of Guelph, Guelph, ON, Canada

P2-147 A Rapid Screening Method for ß-Adrenergic Agonist Residues Incurred in Animal Urine Using Direct Analysis in Real Time Mass Spectrometry (DART-MS) — WEILIN SHELVER, Shubhash Chakrabarty, David Smith, U.S. Department of Agriculture, Fargo, ND, USA

P2-148 Clear Safety™ *Salmonella*: Automated Targeted NGS Detection and Serotyping from Sample Enrichments — ANDREW LIN, Atul Singh, Ramin Khaksar, Clear Labs, San Carlos, CA, USA

P2-149 Reduced Enrichment Time and Threshold Testing for *Salmonella* spp. — JOSHUA WHITWORTH, Jennifer Pelowitz, Yicheng Xie, Alex Brandt, Mike Clark, Sophie Pierre, Bio-Rad Laboratories, Hercules, CA, USA

P2-150 Rapid Detection of *Listeria monocytogenes* in Poultry Matrices Using Loop-Mediated Isothermal Amplification (LAMP)-Bioluminescent Assay — GABRIELA STANCANELLI, Gustavo Gonzalez, Lionel Fernandez, Ulda Soledad Fuentes, 3M Food Safety, Buenos Aires, Argentina

P2-151 A Nonculture Technique for Rapid Screening of *Salmonella* Typhimurium Flagellar Antigens in Raw Chicken Meat — FUR-CHI CHEN, Abdullah Ibn Mafiz, Roger Bridgman, Tennessee State University, Nashville, TN, USA

P2-152 Validation of a Cultural-Based Detection System for the Isolation of *Arcobacter butzleri*, *Arcobacter cryaerophilus*, and *Arcobacter skirrowii* in Raw Ground Poultry — PAUL T. NGUYEN, Lawrence Restaino, R & F Products, Inc., Downers Grove, IL, USA

P2-153 Evaluating the Shelf Life of Vacuum-Packaged Chicken Using an Accelerated Shelf-Life Method — TUSHAR VERMA, Luke Brown, Daniel Unruh, Sara LaSuer, Robert Ames, Corbion, Lenexa, KS, USA

P2-154 Shelf-Life Extension of Vacuum-Packaged Raw Ground Turkey Using Newly Developed Antimicrobials — TUSHAR VERMA, Luke Brown, Sara LaSuer, Garrett McCoy, Robert Ames, Daniel Unruh, Corbion, Lenexa, KS, USA

P2-155 Low Temperature and Copper Exposure Enhances *Listeria monocytogenes* Biofilm Formation — ANGELICA REYES-JARA, Camila Solar, Francisca Cymbron, Ana-María Gonzalez, Angel Parra, Magaly Toro, INTA, University of Chile, Santiago, Chile

P2-156 DNA Extraction Method Comparison for the Detection of *Salmonella* in Seafood by qPCR — ANNA MAOU-NOUNEN-LAASRI, Andrew Jacobson, Thomas Hammack, Hua Wang, FDA/CFSAN, College Park, MD, USA

P2-157 Assessing the Efficacy of Addition of Bacteriophage in the Wheat Tempering Water to Reduce the *E. coli* O121 and O26 Load of Wheat — JARED RIVERA, Shivaprasad DP, Amit Vikram, Kaliramesh Siliveru, Kansas State University, Manhattan, KS, USA

P2-158 The Impact of Drying on the Survival of *Escherichia coli*, *Listeria innocua* and *Bacillus cereus* on Sugar Kelp — RICHA ARYA, Jennifer Perry, Denise Skonberg, University of Maine, Orono, ME, USA

P2-159 Validation of a Multiplex PCR Workflow for the Detection of *Vibrio cholerae*, *Vibrio parahaemolyticus* and *Vibrio vulnificus* from Seafood — Nikki Faulds, David Crabtree, Nicole Cuthbert, Katharine Evans, Frank Godawski, MATTHEW HAHS, Annette Hughes, Dean Leak, Craig Manthe, Bailey Matthews, Wendy McMahon, Lydia Ruben, Daniele Sohier, Patrick Stephenson, Thermo Fisher Scientific, Lenexa, KS, USA

P2-160 Impact of Environmental Stresses on the Viability State of *Listeria monocytogenes* and *Listeria innocua* Analyzed by Raman Microspectroscopy, Molecular Biology and Microbiology Techniques — SYLVAIN TRIGUEROS, Tommy Dedole, Thomas Brauge, Sabine Debuiche, Véronique Rebuffel, Sophie Morales, Pierre R. Marcoux, Graziella Midelet, University Grenoble Alpes, CEA, LETI, Grenoble, France

P2-161 The Diversity of Fish Species Presents a Challenge with Universal Detection of Fish Residue – Can a Targeted Approach be Used to Improve Detection? — TENGFEI LI, Shyamali Jayasena, Joseph Baumert, University of Nebraska-Lincoln, Lincoln, NE, USA

P2-162 The Antibacterial Efficacy of Two Hemp (*Cannabis* sp.) Cultivars on *Listeria monocytogenes* and *Salmonella enterica* — AARON DUDLEY, Lamin Kassama, Armitra Jackson-Davis, Xianyan Kuang, Ernst Cebert, Alabama A&M University, Normal, AL, USA

Retail and Food Service Safety

P2-163 Predicting the Growth of *Salmonella* Typhimurium Inoculated on Chicken Breast Fillets during the Simulated Less-Than-Truckload Cyclic Temperature Abuse Conditions — CHARLES HERRON, Mark Tamplin, Laura Garner, Aftab Siddique, Micah T. Black, Bet Wu, Amit Morey, Auburn University, Auburn, AL, USA

P2-164 Assessment of Fresh Fish in Retail Markets for Contamination with Major Fecal Pathogens and Antibiotic-Resistant Organisms — Mohammed Amin, Mohammed Hossain, Subarna Roy, Sumita Saha, Md. Rayhanul Islam, Zahid Mahmud, Md. Serajul Islam, Clare Narrod, Salina Parveen, MOHAMMAD ISLAM, Laboratory of Food Safety and One Health, International Centre for Diarrhoeal Disease Research, Bangladesh Dhaka, Bangladesh

P2-165 Understanding of and Compliance with Hazard Analysis and Critical Control Point (HACCP) in Selected Restaurants Along the East-West Corridor, Trinidad, West Indies — Julia Daniella Ribeiro, NEELA BADRIE, Marsha Singh, The University of the West, St. Augustine, Trinidad and Tobago

P2-166 Evaluating the Impact of Requiring Certified Food Protection Managers on Inspection Compliance — ALLISON HOWELL, Michala Krakowski, Barbara Kowalcyk, Gina Nicholson Kramer, Sarah Jensen, Nichole Lemin, Alexander Evans, The Ohio State University, Columbus, OH, USA

P2-167 Does Food Safety Education Matter? Perspectives of Hospitality Leaders — HAN WEN, Bingjie Liu-Lastres, Le Bich Ngoc Vo, University of North Texas, Denton, TX, USA

P2-168 Food Choice Behaviors of College Students with Food Allergies: A Comparison between On-Campus and Off-Campus Dining Options — HAN WEN, Yee Ming Lee, Erol Sozen, University of North Texas, Denton, TX, USA

P2-169 Food Safety Attitudes, Knowledge, Self-Reported Practices and Observed Behaviour of Food-Service Employees: Triangulation of Findings in Published Research — VERONIKA BULOCHOVA, Ellen Evans, Elizabeth C. Redmond, Claire Haven-Tang, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P2-170 Impact of Hand Washing or Alcohol-Based Hand Sanitizer on Bacterial Contamination of Hands and Surfaces in a Kitchen Environment: A Volunteer Study — REBECCA GOULTER, Emily Kingston, Jason Frye, Catherine Sander, Brian Chesanek, Lisa Shelley, Lydia Goodson, James Arbogast, Chip Manuel, Lee-Ann Jaykus, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

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Sanitation and Hygiene

P2-171 A Study of Food Hygiene and Sanitation-Related *Journal of Food Protection* Articles from 2017–2021: Can This Evaluation Help Food Professionals Develop *Salmonella* Control Programs? — AMIT KHERADIA, Remco: A Vikan Company, Zionsville, IN, USA

P2-172 Novel Use of Omics to Evaluate the Hygienic Design and Operation of Equipment in a Live Factory Environment — Brendan Ring, PABLO CARRION, Nestle, St. Louis, MO, USA

P2-173 Efficacies of Cleaning and Sanitizing Treatments for Blueberry Harvest Containers — YAXI DAI, Renee Holland, Sarah Doane, Wei-Qiang Yang, Jinru Chen, The University of Georgia, Griffin, GA, USA

P2-174 Formation/Removal of Biofilms on/from Food-Grade Elastomeric Polymers vs. Plexiglass Used for the Fruit-Catching Plates of OTR Machine Harvesters — Peien Wang, Minji Hur, Lisa DeVetter, Fumiomi Takeda, JINRU CHEN, The University of Georgia, Griffin, GA, USA

P2-175 The Effect of Different Sanitation Treatments on the Frequency of *Listeria monocytogenes* Detected on Non-Food Contact Surfaces in Apple Packinghouses — MARYSABEL MENDEZ ACEVEDO, M. Laura Rolon, Priscilla Sinclair, Dumitru Macarisin, Luke LaBorde, Jasna Kovac, Penn State University, State College, PA, USA

P2-176 The Residue Levels and Decontamination Ability of Disinfectants in the Sanitizing Process of Washed Eggs — TAI-YUAN CHEN, Yu-Rui Chen, Sung-Jen Huang, Yi-Ming Chen, Ming-Che Tsai, Cheng-Ming Chang, National Taiwan Ocean University, Keelung, Taiwan

P2-177 The Impact of Surface Conditions on Sanitizer Efficacy Against *Listeria monocytogenes* Biofilms on Food-Contact Surface — ZI HUA, Meijun Zhu, Washington State University, Pullman, WA, USA

P2-178 Efficacy of Sodium Acid Sulfate to Reduce Shiga-Toxigenic *Escherichia coli* and Their Biofilms *in Vitro* and on Water-Contact Surfaces — DIVYA JARONI, Allison Fredman, Oklahoma State University, Stillwater, OK, USA

P2-179 Inactivation of Human Coronavirus 229E by Various Disinfectants in Suspension — Eun Ji Lee, Eun Seo Choi, Sangha Han, Seok-Woo Hyun, Jeong Won Son, Sazzad Hossen Toushik, KYE-HWAN BYUN, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

P2-180 Combination of Essential Oils with Bacteriophage Against *Listeria monocytogenes* Biofilms on Abiotic Surfaces — KYE-HWAN BYUN, Min Woo Choi, Sangha Han, Byoung-Hu Kim, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

P2-181 Antibiofilm Effects of Quercetin Against *Salmonella enterica* Biofilm Formation and Molecular Mechanism on Food and Food-Contact Surfaces — Pantu Kumar Roy, KYE-HWAN BYUN, Yu Kyung Kim, Md. Furkanur Rahaman Mizan, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

P2-182 Reduction of Feline Calicivirus and Tulane Virus by Aqueous Ozone in Clean and Organic Load Containing Water — Joseph Choi, DORIS D'SOUZA, University of Tennessee-Knoxville, Knoxville, TN, USA

P2-183 Evaluation of Sanitizer Efficacy Against Human Norovirus on Surfaces: The Role of Wiping — JEREMY FAIRCLOTH, Chip Manuel, James Arbogast, Rebecca Goulter, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P2-184 Inactivation of Tulane Virus in Buffer and on Formica Coupons by 254nm and 279nm UV-C Systems — Emily Camfield, Brahmaiah Pendyala, ANKIT PATRAS, Doris D'Souza, Tennessee State University, Nashville, TN, USA

P2-185 Phi6 Inactivation on Surfaces with Hypochlorous Acid Based on Surface Type, Inoculum Matrix, and Contact Time — ADAM BAKER, Allyson Hamilton, Sahaana Chandran, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA

P2-186 Thermal Inactivation as a Function of Microbial Target and Food Matrix Composition during Superheated Steam Treatments — YADWINDER SINGH RANA, Long Chen, VM Balasubramaniam, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P2-187 Inactivation of *Listeria monocytogenes* Biofilms on Stainless Steel Surfaces Using Blue Light — MAGDALENA OLSZEWSKA, Govindaraj Dev Kumar, Francisco Diez-Gonzalez, Center for Food Safety, University of Georgia / Department of Industrial and Food Microbiology, University of Warmia and Mazury, Olsztyn, PL/ Griffin, GA, USA

P2-188 Blue Light Efficacy Against *Listeria monocytogenes* Dried on Inert Surfaces — MAGDALENA OLSZEWSKA, Govindaraj Dev Kumar, Francisco Diez-Gonzalez, Center for Food Safety, University of Georgia / Department of Industrial and Food Microbiology, University of Warmia and Mazury, Olsztyn, PL/ Griffin, GA, USA

P2-189 Quantifying the Electrostatic Adhesion Force of Powders on Food Contact Surfaces for Dry Cleaning and Sanitization — IAN KLUG, Quincy Suehr, Bradley Marks, Sanghyup Jeong, Michigan State University, Caledonia, MI, USA

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NOTES

WEDNESDAY POSTERS 8:30 A.M. – 3:30 P.M.

P3 POSTER SESSION 3

Beverages and Acid/Acidified Foods
Food Chemical Hazards and Food Allergens
Food Toxicology
General Microbiology
Laboratory and Detection Methods
Low-Water Activity Foods
Microbial Food Spoilage
Modeling and Risk Assessment
Molecular Analytics, Genomics and Microbiomes
Packaging
Seafood

Hall A

P3-01 through P3-86 – Authors present 9:00 a.m. – 11:00 a.m.

P3-87 through P3-190 – Authors present 1:00 p.m. – 3:00 p.m.

Beverages and Acid/Acidified Foods

P3-01 A Study on Growth and Toxin Production of *Clostridium botulinum* in Cold Brew Coffee during Long Term Storage — TRAVIS MORRISSEY, Catherine Rolfe, Viviana Aguilar, Guy Skinner, N. Rukma Reddy, U.S. Food and Drug Administration, Bedford Park, IL, USA

P3-02 Culture-Dependent and Independent Approaches for Microbial Characterization of Home-Brewed Ginger Beer — Sushumna Canakapalli, HYUNHEE HONG, Devin Daeschel, Thomas Shellhammer, Si Hong Park, Oregon State University, Corvallis, OR, USA

P3-03 Acid Adaptation Increases Resistance of *Escherichia coli* O157:H7 in Bok Choy (*Brassica rapa* subsp. *chinensis*) Juice to High Pressure Processing — ANDREA KOO, Vinayak Ghate, Weibiao Zhou, National University of Singapore, Singapore

P3-04 Survival of Probiotic *Lactobacillus* spp. during Kombucha Fermentation — Alexandria Bromley, JENNIFER PERRY, University of Maine, Orono, ME, USA

P3-05 Variation in Biological and Chemical Characteristics of Cabbage-Based Ferment Produced in Home and Laboratory Conditions — MELANIE HANLON, Hanna Louvau, Heesun Kim, Zoe Mitchell, Peter Finnegan, Amanda Ting, Mariah Mier, Natalia Ribeiro, Thais Ramos, Wannes Van Beeck, Lei Wei, Maria Marco, Erin DiCaprio, University of California, Davis, Davis, CA, USA

P3-06 Inactivation of *Escherichia coli* O157:H7 in Claussen Pickle Products Stored at 4°C — OLIVIA ARENDS, Mu Ye, Eric Ewert, Kraft Heinz Company, Glenview, IL, USA

P3-07 Detection of Spoilage Organisms in Tea Beverages Using Hygiena™ Microsnap™ Total Enrichment Device and Enhanced Nutrient Broth — Delia Calderon, Shreya Datta, RENAE ELLIS, Hygiena, Camarillo, CA, USA

Food Chemical Hazards and Food Allergens

P3-08 Food Allergen and Gluten Associated Recalls of FDA-Regulated Foods from October 2012 to September 2019 — GIRDHARI SHARMA, Yinqing Ma, Stefano Luccioli, U.S. Food and Drug Administration, College Park, MD, USA

P3-09 Development of a Targeted Mass Spectrometry Method for the Detection of Egg in Multiple Processed Food Matrices — LIYUN ZHANG, Philip Johnson, Melanie Downs, Food Allergy Research and Resource Program, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-10 Identification of Wheat-Specific Peptides for Use in the Development of Immunoassay and Proteomic-Based Detection Methods — JESSICA HUMPHREY, Justin Marsh, Shyamali Jayasena, Philip Johnson, Joseph Baumert, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-11 Variance Estimations When Measuring Peanut and Soy Protein in Discrete Wheat Flour Samples — Binaifer Bedford, GIRDHARI SHARMA, Shizhen Wang, Joshua Warren, Sefat Khuda, Rebecca Harris, Sakshi Gandhi, Paul Wehling, Mark Arlinghaus, Thomas Whitaker, Stuart Chirtel, Lauren Jackson, U.S. Food and Drug Administration, Bedford Park, IL, USA

P3-12 Selection of Target Peptides for a Mass Spectrometry Method to Detect Peanut Protein in Processed Food Matrices — SARA SCHLANGE, Justin Marsh, Melanie Downs, Philip Johnson, Food Allergy Research and Resource Program, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-13 Detection of Edible Insects Using Three Crustacean Allergen Detection Methods: ELISA, xMAP Food Allergen Detection Assay, and Real-Time PCR — ANNE EISCHEID, Rakhi Panda, Chung Cho, Sarah Stadig, U.S. Food and Drug Administration, College Park, MD, USA

P3-14 Withdrawn

P3-15 Performance Verification of an ELISA-Based Gluten Assay on Plant-Based Meat and Food — Hwee Chen Mabel Ng, lee Jiuan Chin, Chloe Ng, MEREDITH SUTZKO, Yong Wee Liau, Romer Labs Inc., Newark, DE, USA

P3-16 Performance Verification of an ELISA-Based Assay Sesame in Pastries Found in Bakeries — Hwee Chen Mabel Ng Lee Jiuan Chin, Chloe Ng, MEREDITH SUTZKO, Yong Wee Liau, Romer Labs Inc., Newark, DE, USA

P3-17 Ergot Occurrence in Asian Grains — Hwee Chen Mabel Ng, Lee Jiuan Chin, Monika Vedharathinam, MEREDITH SUTZKO, Yong Wee Liau, Romer Labs Inc., Newark, DE, USA

P3-18 Controlled Fermentation with Selected *Lactobacilli* and Yeast Probiotics Decontaminates Aflatoxins in Maize Gruel and Changes the Amino Acid Profile Differentially — TITILAYO FALADE, Kolawole Banwo, Taiwo Adesina, Olubunmi Aribisala, International Institute of Tropical Agriculture, Ibadan, Nigeria

Food Toxicology

P3-19 Use of *Aspergillus oryzae* Koji to Inhibit Aflatoxin Production of *Aspergillus flavus* in the Production of Korean Soybean Paste — SO YOUNG WOO, A-Yeong Jeong, Sang Yoo Lee, Hyang Sook Chun, Chung-Ang University, Anseong, South Korea

P3-20 Mycotoxin Reduction after the Production of *Dawadawa* (An African Fermented Condiment) from Bambara Groundnut — JANET ADEBO, Eugenie Kayitesi, Patrick Njobeh, University of Johannesburg, Johannesburg, South Africa

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P3-21 Impact of Fermentation on Mycotoxins Detoxification — JANET ADEBO, Eugenie Kayitesi, Oluwafemi Adebo, Patrick Njobeh, University of Johannesburg, Johannesburg, South Africa

P3-22 Fermentation of Sorghum into Sourdough Reduces Mycotoxins Contents — OLUWAFEMI ADEBO, Eugenie Kayitesi, Patrick Njobeh, University of Johannesburg, Johannesburg, South Africa

P3-23 *In Vitro* Testing of Lytic Bacteriophages Isolated from Virulent Strains of *Vibrio parahaemolyticus* for Biocontrol Applications — Siman Liu, David Gonzalez, Paul Gulig, NAIM MONTAZERI, University of Florida, Gainesville, FL, USA

P3-24 Mild Lactic Acid Stress Causes Strain-Dependent Reduction in SEC Protein Levels — Danai Etter, Céline Jenni, Taurai Tasara, SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

P3-25 Mild NaCl Stress Reduces the Synthesis of Staphylococcal Enterotoxin C — Danai Etter, Christina Ukowitz, Corinne Eicher, Taurai Tasara, SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

P3-26 Glucose Stress Lowers Staphylococcal Enterotoxin C Production — Danai Etter, Céline Jenni, Mariella Greutmann, Tabea Waltenspül, Taurai Tasara, SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

P3-27 Whole Genome Sequencing Reveals Biopesticidal Origin of *Bacillus thuringiensis* in Foods — Michael Biggel, Danai Etter, Sabrina Corti, Peter Brodmann, Roger Stephan, Monika Ehling-Schulz, SOPHIA JOHLER, Institute for Food Safety and Hygiene, University of Zurich, Zurich, Switzerland

P3-28 Screening *Bacillus cereus* Psychrotrophic Cereulide Producers in Food Products — JELENA JOVANOVIC, Svitlana Tretiak, Katrien Begyn, Andreja Rajkovic, Ghent University, Ghent, Belgium

P3-29 Persistence of Silver Nanoparticles in Fresh-Cut Romaine Lettuce during Simulated Commercial Processing — GAYATHRI GUNATHILAKA, Hui Li, Wei Zhang, Elliot Ryser, Michigan State University, East Lansing, MI, USA

General Microbiology

P3-30 Bilious Biofilms Formation by *Salmonella* and Shiga-Toxin-Producing *E. coli* — GOVINDARAJ DEV KUMAR, Ikechukwu Oguadinma, University of Georgia, Griffin, GA, USA

P3-31 Antibacterial and Antibiofilm Performance of Far-UVC 222 Nm Light Inactivation Against Gram-Positive and Gram-Negative Foodborne Pathogenic Bacteria — HANYU CHEN, Carmen Moraru, Cornell University, Ithaca, NY, USA

P3-32 UV-C and Heat Resistance of *Bacillus thuringiensis* and *Bacillus cereus* — XINGCHEN ZHAO, Bo Vandenbulcke, Yannick Delongie, Valentina Guarino, Monica Höfte, Pieter Spanoghe, Andreja Rajkovic, Mieke Uyttendaele, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

P3-33 Correlation between Dipicolinic Acid (DPA) Release and Heat Resistance of *C. botulinum* Type A and *C. sporogenes* Spores during Thermal Processing — CATHERINE ROLFE, Travis Morrissey, Viviana Aguilar, Benjamin Redan, Guy Skinner, N. Rukma Reddy, U.S. Food and Drug Administration, Bedford Park, IL, USA

P3-34 Phenotypic and Genotypic Comparisons of *Campylobacter jejuni* Strains with Different Clinical Manifestations — JENNIFER MYDOSH, Steven Huynh, Craig T. Parker, Kerry Cooper, The University of Arizona, Tucson, AZ, USA

P3-35 Evaluation of Impact of Emulsion Matrix on Survival of *Salmonella* during Simulated Gastric Digestion — ZHUJUN GAO, Rohan Tikekar, University of Maryland, College Park, MD, USA

P3-36 Microbiology Studies in a Variety of Plant-Based Alternative Foods — Nikki Taylor, SAMOA ASIGAU, John Mills, Jada Jackson, Michelle Keener, Patricia Rule, Vikrant Dutta, bioMérieux, Inc., Hazelwood, MO, USA

P3-37 Monitoring Real-Time Resuscitation of Sub-Lethally Injured or Dormant Cells of *Listeria monocytogenes* with Direct Time-Lapse Cell Imaging — Marianna Arvaniti, Panagiotis Tsakanikas, Vasiliki Papadopoulou, Athanasios Balomenos, Artemis Giannakopoulou, PANOS SKANDAMIS, Agricultural University of Athens, Athens, Greece

P3-38 Thermal Inactivation Kinetics of *Escherichia coli* K12 in Watermelon, Cantaloupe, Blueberry, and Grapefruit Juices Determined by Aluminum Thermal-Death-Time Disks — LIDA RAHIMI ARAGHI, Abhinav Mishra, Koushik Adhikari, Rakesh K. Singh, University of Georgia, Athens, GA, USA

P3-39 Validation of 13 Enrichment Procedures for the Detection of *Listeria* Species from Environmental Samples Using the Hygiena™ BAX® System — JULIE WELLER, Christine Chapman, Deja Latney, Hygiena, New Castle, DE, USA

P3-40 Compatibility of the Hygiena™ BAX® System and the 3M™ Environmental Scrub Sampler for the Detection of *Salmonella* and *Listeria* from Stainless Steel and Plastic Surfaces — JULIE WELLER, Christine Chapman, Deja Latney, Hygiena, New Castle, DE, USA

P3-41 A New Approach to Sampling Biofilms Using the 3M™ Environmental Scrub Sampler with 10mL Wide Spectrum Neutralizer (ESSWSN) — Sailaja Chandrapati, ROCIO FONCEA, 3M Food Safety, St. Paul, MN, USA

P3-42 Detection of *Salmonella* Typhimurium from Environmental Cellulose and Polyurethane Sponge Swab Rinsates as Compared to Direct Sponge Enrichment — Ryan Zimmerman, Laurie Post, LEANNE HAHN, Brian Farina, Charles Deibel, Deibel Laboratories, Inc., Madison, WI, USA

P3-43 Detection of *Salmonella enterica* in Environmental Surface Samples Using the *Salmonella* Canary® Zephyr Assay — YANGYANG WANG, Samantha Wright, Maria Rodriguez, Deevyne Young, Alexandra Maltbie, J.J. Lehett, Andrew Flannery, Smiths Detection, Baltimore, MD, USA

WEDNESDAY

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P3-44 Withdrawn

P3-45 Comparison of Real-Time PCR, VIDAS LIS, and the FDA BAM Culture Method for Detecting *Listeria monocytogenes* on Stainless Steel Surfaces Co-Inoculated with *Enterococcus faecalis* — HEE JIN KWON, Leah Weinstein, Samira Mitias, Jianghong Meng, Thomas Hammack, Karen Jinneman, Yi Chen, University of Maryland, College Park, MD, USA

P3-46 The Impact of Organic Matter Type on Recovery of *Listeria monocytogenes* during Environmental Monitoring — SARAH JONES, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA

P3-47 Direct BAX® Q7 PCR Confirmation of Presumptive Positive Results after Rapid Screening for *Listeria* with Hygiena™ Microsnap™ Surface Express *Listeria L. mono* Glo Devices — Mat Lovesmith, KAROLINA SYNOWIEC, Hygiena, Guildford, United Kingdom

P3-48 Swabbing Efficiency of Hygiena™ Listeria Swab (MSX *L. mono* Glo) — SHREYA DATTA, Rafael Barajas, Hygiena, Camarillo, CA, USA

P3-49 Relationship between Hygiena™ Innovate RLU Detection and pH for All Data Using *Staphylococcus aureus* as an Example — SHREYA DATTA, Rafael Barajas, Hygiena, Camarillo, CA, USA

P3-50 Advantages of Rapid ATP Sterility Testing Using the Hygiena™ Innovate System for Rapid Detection of *Geobacillus stearothermophilus* in Non-Dairy Milk Alternatives — SHREYA DATTA, Rafael Barajas, Bernard Linke, Hygiena, Camarillo, CA, USA

P3-51 Manual or Automated: A Comparison of DNA Recovery Methods for Shiga Toxin-Producing *Escherichia coli* from Environmental Samples — ROBERTO GUZMAN, Andrew Battin, Alec Estrada, Pascal Iraola, Ai Kataoka, Phillip Kuri, Jennifer Wolny, Rebecca Zaayenga, Natalie Brassill, Channah Rock, Julie Kase, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, College Park, MD, USA

P3-52 Head to Head Sensitivity Comparison of Four Commonly Used PCR Methods in Food Pathogen Testing — DANIEL DEMARCO, Erica Miller, J. David Legan, Joelle Mosso, Eurofins Microbiology Laboratories, Louisville, KY, USA

P3-53 Norovirus Capsid P Domain Detection Using a Real-Time OMPG Nanopore — MINJI KIM, Joshua C. Foster, Min Chen, Matthew D. Moore, University of Massachusetts Amherst, Amherst, MA, USA

P3-54 Evaluating the Potential of Magnetic Ionic Liquids to Capture Non-Enveloped Virus Versus Viral RNA for One-Tube Capture, Concentration, and Genomic Extraction — SLOANE STOUFER, Marcelino Varona, Jared Anderson, Byron Brehm-Stecher, Matthew Moore, University of Massachusetts, Amherst, Amherst, MA, USA

P3-55 Detectability of Novel *Listeria* Strains Using Alternative PCR and Chromogenic Methods — ASTRID CARIOU, Richard Prudent, Gulustan Kuccuk, Jean-Philippe Tourniaire, Yannick Bichot, Mike Clark, Christophe Quiring, Sophie Pierre, Bio-Rad Laboratories, Marnes-la-Coquette, France

P3-56 Suretect *Listeria monocytogenes* PCR Assay and Suretect *Listeria* Species PCR Assay Awarded AOAC Official Methods of Analysis First Action — Evangelos J. Vandoros, Daniel Thomas, Annette Hughes, David Crabtree, Katharine Evans, Daniele Sohier, MATTHEW HAHS, Benjamin Bastin, Wesley Thompson, Joe Benzinger, Erin Crowley, Thermo Fisher Scientific, Lenexa, KS, USA

P3-57 Validation of a Real-Time PCR Workflow for the Detection of *Staphylococcus aureus* in Dairy Matrices for AOAC PTM Approval — Nikki Faulds, Katharine Evans, David Crabtree, Annette Hughes, Daniele Sohier, Craig Manthe, MATTHEW HAHS, Pauliina Heikkinen, Emmi Hurskainen, Kateland Koch, Wesley Thompson, Benjamin Bastin, Joe Benzinger, Thermo Fisher Scientific, Lenexa, KS, USA

P3-58 Rapid Detection of *Listeria monocytogenes* Using an Oligonucleotide-Based Flow-Through Electrochemical System — CHERYL ARMSTRONG, Joseph Capobianco, Andrew Gehring, Joseph Lee, USDA, Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, PA, USA

P3-59 An Impedimetric Method of *Listeria monocytogenes* Detection for Food Safety Applications — BAVITHTHIRA SUGANTHAN, Or Zolti, Ramaraja Ramasamy, University of Georgia, Athens, GA, USA

P3-60 Evaluation of Multiplex Nanopore Sequencing for *Salmonella* Serotype Prediction and Antimicrobial Resistance Gene and Virulence Gene Identification — Silin Tang, Xingwen Wu, Hao Luo, Chongtao Ge, Feng Xu, Shaoting Li, XIANGYU DENG, Martin Wiedmann, Robert Baker, Abigail Stevenson, Boris Bolschikov, Guangtao Zhang, Mars Global Food Safety Center, Beijing, China

P3-61 Magnetic Extraction and Detection of *Salmonella* Typhimurium — OZNUR CALISKAN-AYDOGAN, Evangelyn Alocilja, Michigan State University, East Lansing, MI, USA

P3-62 Transition from Relative (qPCR) to Absolute (dPCR) Quantification and the Potential Food Safety Applications — BRIENNA ANDERSON-COUGHLIN, Adrienne Shearer, Alexis Omar, Kyle McCaughan, Kalmia Kniel, University of Delaware, Newark, DE, USA

P3-63 Evaluating, among Food Workers, the Impacts of Vaccination, Testing, and Non-Pharmaceutical Interventions on SARS-CoV-2 Transmission: A Novel Integrated QMRA-IDT Modeling Approach — ELIZABETH SAJEWSKI, Julia Sobolik, Alicia Kraay, Lee-Ann Jaykus, Ben Lopman, Juan S. Leon, Emory University, Atlanta, GA, USA

Laboratory and Detection Methods

P3-64 Evaluation of the Performance of Different *Listeria* Enrichment Broths Using Bioscreen Automated System — LEI ZHANG, Jerry Tolan, Molly Dolan, Giovanni Monterroso, Robert Donofrio, Preetha Biswas, Neogen Corporation, Lansing, MI, USA

P3-65 Evaluation of the Pathfinder™ *Listeria* Broth Method for the Detection of *Listeria monocytogenes* and *Listeria ivanovii* — LAUREN HAMILTON, Makena Brand, Manuel Escalera, Anna Klavins, Rianna Malherbe, Andre Hsiung, Hardy Diagnostics, Santa Maria, CA, USA

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P3-66 Assessment of Multi-Toxin Detection with Myco 7 Array on the Evidence Investigator Analyser According to the Association of American Feed Control Officials Method Performance Criteria — J. Porter, M. Plotan, A. HUXLEY, C. Stead, M. L. Rodríguez, R. I. McConnell, S.P . Fitzgerald, Randox Food Diagnostics, Crumlin, United Kingdom

P3-67 New Convenient Medium for the Simultaneous Recovery and Rapid Detection of *Salmonella* and *Cronobacter sakazakii* in Powdered Infant Nutritional Products — SERGIY OLISHEVSKYY, Jean-Felix Sicard, Alex Eyraud, FoodChek Laboratories Inc., Sainte-Julie, QC, Canada

P3-68 Detrimental Effects of Adding 0.5% K2SO3 to *Salmonella* Enrichments Containing Onion Powder — CAROL SIVEY, Caitlin Quick, Nestle, Dublin, OH, USA

P3-69 Independent AOAC Validation Study of the Detect^{x} Combined Assay for the Detection of *Aspergillus*, *Salmonella*, and STEC (*stx*1 and/or 2) in Dried Cannabis Flower and Dried Hemp Flower — Benjamin Katchman, MICHAEL TOMCHANEY, Dawn Bueschel, Peaches Ulrich, Shayla Freeman, Kevin O'Brien, Rick Eggers, Melissa May, Michael Hogan, Wesley Thompson, Joe Benzinger, Benjamin Bastin, PathogenDx, Tucson, AZ, USA

P3-70 AOAC® Performance Tested Method℠ Validation for the Detection of *Salmonella* and Shiga Toxin-Producing *E. coli* (STEC) from Matrices Containing Delta-9-Tetrahydrocannabinol Using a Loop-Mediated DNA Amplification (LAMP) Bioluminescent Based Rapid Detection Method — Micki Rosauer, Leo Horine, ALEXANDRA TUDOR, Karen Silbernagel, Gabriela Lopez Velasco, TEQ Analytical Labs, Denver, CO, USA

P3-71 Comparative Evaluation of Loop-Mediated Isothermal Amplification (LAMP) Bioluminescent Assay and FDA BAM Procedure for Detection of *Salmonella* in Probiotic Products — MICHELE MANUZON, Leslie Horton, Wilfredo Dominguez, Gabriela Lopez Velasco, 3M Food Safety, St. Paul, MN, USA

P3-72 Independent Laboratory Study for the Nutraplex™ PRO Assay for the Detection of *Escherichia coli, Staphylococcus aureus,* and *Salmonella* spp. — ERIN CROWLEY, Benjamin Bastin, Joe Benzinger, Wesley Thompson, Q Laboratories, Cincinnati, OH, USA

P3-73 Validation of the GENE-UP® Nutraplex PRO™ Assay for the Simultaneous Detection of *Escherichia coli*, *Staphylococcus aureus*, and *Salmonella* Species in Select Foods with PCR-Based Culture Confirmation — Nikki Taylor, JOHN MILLS, Patricia Rule, Deborah Briese, Michelle Keener, Vikrant Dutta, Samoa Asigau, Ron Johnson, J. Stan Bailey, Adam Joelsson, Greg Schanz, bioMérieux, Inc., Hazelwood, MO, USA

P3-74 Enhancing the Isolation Capability of *Salmonella* Isolates Using ISO 6579-1: 2017Reference Method in Combination with Dynabeads Anti-*Salmonella* — MOHAMMED ALANGARI, Abdulrahman Alsultan, Ibrahim Bin Saleeh, Saudi Food & Drug Authority, Riyadh, Saudi Arabia

P3-75 Productivity and Accuracy Comparison Study between the 3M™ Petrifilm™ Plate Reader Advanced and a Trained Technician, Using Two 3M™ Petrifilm™ Plate Types — SEONG IL KANG, Sangjin Shin, Alec Teagarden, Dongwook Jung, Seongmin Hong, Jinyoung Beom, Jisu Yu, 3M Korea, Seoul, South Korea

P3-76 Detection of *Lactobacilli*, Yeast, and Moulds in Kraft Heinz Tomato Ketchup Using the Hygiena™ Innovate Rapiscreen™ System — Mat Lovesmith, BERNARD LINKE, Gabriella Tarlowska, Alison Bennett, Rachel Bayliss, Hygiena, Guildford, United Kingdom

P3-77 Detection of Commercial Sterility in Non-Dairy Milk Alternative Products Using the Hygiena™ Innovate Rapiscreen™ System — Mat Smith, BERNARD LINKE, Gabriella Tarlowska, Colm Scully, Johanna Ramirez, Hygiena, Guildford, United Kingdom

P3-78 Comparison of Three Methods for Enumeration of *Bacillus coagulans* (BC30) from Pet Food Ingredients and Products — GABRIEL SANGLAY, Ryan Hartpence, Pablo Carrion, Nestle Quality Assurance Center, Dublin, OH, USA

P3-79 Detection of Beverage Spoilage Organisms in Low pH Juice Products Using the Hygiena™ Innovate Rapiscreen™ System — Mat Smith, JACK GARRETTY, Hygiena International Ltd., Guildford, Surrey, United Kingdom

P3-80 Reduced Enrichment Time for Detection of *Listeria* at 37°C — JOSHUA WHITWORTH, Jennifer Pelowitz, Jean-Philippe Tourniaire, Yannick Bichot, Mike Clark, Sophie Pierre, Bio-Rad Laboratories, Hercules, CA, USA

P3-81 Evaluation of New Matrixes with Perkinelmer Solus One *Listeria* and Automated Dynex DS2 System — MU YE, Eric Ewert, Olivia Arends, Simon Illingworth, Nevin Perera, David Higgins, Kraft Heinz Company, Glenview, IL, USA

P3-82 Verification of Fit for Purpose of the 3M Molecular Detection Assay 2- *Salmonella* spp. and 3M Molecular Detection Assay 2- *Listeria monocytogenes* Following ISO 16140-3 Guidelines for Their Application in Cheese and Ham Matrices — Luisa Brito-Cruz, Dianis Cantillo-Pallares, Ana Karina Carrascal, RUTH DALLOS, Gustavo González-González, Paola Andrea Naranjo-Vasquez, 3M Food Safety, Bogotá, Colombia

P3-83 Solid Phase Reversible Immobilization Bead Concentration Combined with PCR for the Detection of *E. coli* O157:H7 in Foods — RAJIV DHITAL, Azlin Mustapha, University of Missouri, Columbia, MO, USA

P3-84 Evaluation of the GENE-UP® *E. coli* O157:H7 2 (ECO2) for the Detection of *Escherichia coli* O157 (Including H7) in a Variety of Foods — SALEEMA SALEH-LAKHA, Carlos Leon-Velarde, Nathan Larson, Ryan Lee, Sophie Canobio, Agriculture and Food Laboratory (AFL), University of Guelph, Guelph, ON, Canada

P3-85 Validation of the 3M™ Petrifilm™ Rapid Aerobic Count Plate for the Enumeration of Total Aerobic Colony Counts in a Variety of Foods Against the Canadian Reference Method (MFHPB-18) — SALEEMA SALEH-LAKHA, Carlos Leon-Velarde, Nathan Larson, Jennifer Fischer-Jenssen, Ryan Lee, Ana Lozano, Agriculture and Food Laboratory (AFL), University of Guelph, Guelph, ON, Canada

Blue Text – Developing Scientist Competitor

Green Text – Undergraduate Student Competitor

P3-86 Rapid and Direct Identification of Pathogens from Food Matrices Using Magnetic Nanoparticles and Supervised Machine Learning Algorithms Applied to Near Infrared Spectroscopy Data — SAAD ASADULLAH SHARIEF, Evangelyn Alocilja, Michigan State University, East Lansing, MI, USA

Low-Water Activity Foods

P3-87 Effect of Bed-Depth on Inactivation of *Enterococcus faecium* NRRL B-2354 during Hot-Air Drying of Fresh Cut Apple Cubes — XIYANG LIU, Elizabeth Grasso-Kelley, Nathan Anderson, Institue of Food Safety and Health, Bedford Park, IL, USA

P3-88 Inactivation of Foodborne Pathogens in a Nectarine Drying Process — CHAYAPA TECHATHUVANAN, Christopher McNamara, Ocean Spray Cranberries, Inc., Lakeville-Middleboro, MA, USA

P3-89 Regulatory Considerations for Small-Scale Produce Drying Operations: A Multi-State Perspective Obtained through Inspector Interview — MEGAN MEI YEE LOW, Amanda Kinchla, Nicole Richard, Erin DiCaprio, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P3-90 Factors Influencing Desiccation Tolerance of *Salmonella* and Enterohemorrhagic *E. coli* — ASHLEY DEATON, Jessica Lauer, Yawei Lin, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P3-91 Needs Assessment of the Low-Moisture Food Industry: The Next Steps to Advance Food Safety Research and Extension — HAN CHEN, Nathan Anderson, Elizabeth Grasso-Kelley, Felicia Wu, Juming Tang, Linda J. Harris, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P3-92 Validation of Biltong (Dried Beef) Process Lethality Using Non-Pathogenic Surrogate Organisms Associated with Beef — CAITLIN KAROLENKO, Jade Wilkinson, Peter Muriana, Oklahoma State University, Stillwater, OK, USA

P3-93 Time, Temperature, and Antimicrobial Dosage Have Varying Impact on the Reduction of *Escherichia coli* Populations in Wheat Berries — LUKE BROWN, Tushar Verma, Sara LaSuer, Robert Ames, Daniel Unruh, Corbion, Lenexa, KS, USA

P3-94 *Salmonella* Survival on Whole Wheat Berries during Storage — PHILIP STEINBRUNNER, Elizabeth Grasso-Kelley, Nathan Anderson, U.S. Food and Drug Administration, Bedford Park, IL, USA

P3-95 Survivability and Thermal Resistance of *Salmonella* and *Escherichia coli* O121 in Wheat Flour during Extended Storage of 360 Days — Minto Michael, Jennifer Acuff, Daniel Vega, AMNINDER SINGH SEKHON, Lakshmikantha Channaiah, Randall Phebus, Washington State University, Pullman, WA, USA

P3-96 Survival of Shiga Toxin-Producing *E. coli* in Various Wheat Flours during Storage — Tom Jurkiw, EMILY NGUYEN, Julie Haendiges, Elizabeth Reed, Victor Jayeola, Julie Kase, Maria Hoffmann, Jie Zheng, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P3-97 Thermal Resistance of *Enterococcus faecium* NRRL B-2354, *Escherichia coli*, and *Salmonella* in Chocolate Chip Cookies at Three Moisture Levels — ABDULLATIF TAY, Rico Suhalim, Yimare Elliott, Nicole Cuthbert, Erdogan Ceylan, PepsiCo, Barrington, IL, USA

P3-98 Impact of Chlorinated Water on Pathogen Inactivation during Wheat Tempering and Resulting Flour Quality — YAWEI LIN, Senay Simsek, Teresa Bergholz, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, USA

P3-99 Inactivation of *Salmonella* and Shiga Toxin-Producing *Escherichia coli* on Soft Wheat Kernels Using Vacuum Steam Pasteurization — YAWEI LIN, Kirk Dolan, Senay Simsek, Teresa Bergholz, Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, USA

P3-100 Determination of the Thermal Inactivation Kinetics of *Salmonella* and a Surrogate in Milk Powder as Impacted by Water Activity and Protein Content — ERIKA KADAS, Peter Rubinelli, Erin Ramsay, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P3-101 Current Inactivation Strategies for *Cronobacter sakazakii* in Foods: A Systematic Review — Maria Paula Mendonça de Barros Barbosa Gonçalves, Leonardo do Prado Silva, ANDERSON DE SOUZA SANT'ANA, Department of Food Science, Faculty of Food Engineering, University of Campinas, Brazil, Campinas, Brazil

P3-102 Levels and Distribution of *Salmonella* in Naturally Contaminated Cashews — HANNA LOUVAU, Linda J. Harris, University of California, Davis, Davis, CA, USA

P3-103 High Level and Heat Resistance of Natural Microflora Contaminated in Peppers in Sichuan Province, China — Ruimin Xue, Hanhan Liu, SHUXIANG LIU, Sichuan Agricultural University, Ya'an, China

P3-104 Heat Resistance and Transcriptome Sequencing of *Salmonella enterica* Enteritidis PT 30 at Different Degree of Desiccation — Yalan Zhang, Siqi Lv, Shiqi Zhang, Jianqing Zhou, SHUXIANG LIU, Sichuan Agricultural University, Ya'an, China

Microbial Food Spoilage

P3-105 Guaiacol Production is Confirmed in One of Three Novel Species of *Alicyclobacillus* — KATERINA ROTH, Yadwinder Singh Rana, Devin Daeschel, Jasna Kovac, Randy Worobo, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P3-106 Sensitivity of Planktonic Cells and Spores Suspension of *Bacillus amyloliquefaciens, Bacillus atrophaeus, Alicyclobacillus acidoterrestris,* and *Geobacillus stearothermophilus* to Elevated Hydrostatics Pressure Augmented with Mild Heat and Acidic Bactericidal Compounds — Niamul Kabir, Sadiye Aras, Sabrina Wadood, Jyothi George, Shahid Chowdhury, ALIYAR CYRUS FOULADKHAH, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

P3-107 Performance Evaluation of bioMérieux VERIFLOW™ *Alicyclobacillus* Assay and Japan Fruit Juice Association Method for the Testing of *Alicyclobacillus* Species in Juice Raw Materials and Finished Products — KYOHEI SUZUMURA, Keiichi Goto, Tokai University, Shizuoka, Japan

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P3-108 Heat and Sanitizer Resistance of *Sporolactobacillus* spp. Causing Deterioration in Acid Foods — TOSHIYA SONE, Keiichi Goto, Tokai University, Shizuoka, Japan

P3-109 Survival of *Lactobacillus acidophilus* 5 and *Lacticaseibacillus casei* 01 in Alginate Edible Coatings in Fresh-Cut Mango and Melon during Storage — Júlia Vitória Barbosa Dias, Whyara Karoline Almeida Costa, Kataryne Árabe Rimá de Oliveira, Evandro L. de Souza, Tatiana Colombo Pimentel, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P3-110 Improve Taste and Microbial Quality of Plant-Based Meat Analogue Thanks to Food Cultures: The Example of Soy-Minced Meat Analogue — Besnik Hidri, Zdenek Cech, Christian Elmshäuser, Dirk Hoffmann, Michael Jendrusiak, Sabine Hahn, Raquel Fermandez, VERONIQUE ZULIANI, Chr. Hansen, Arpajon, France

P3-111 Evaluation of the Microbial Quality of Plant-Based Meat Analogs — Maria Shaposhnikov, Zhuosheng Liu, Shuai Zhuang, HONGYE WANG, Luxin Wang, University of California, Davis, Davis, CA, USA

P3-112 Using Computer Modeling to Evaluate Suitability of Intervention Targets for Reducing Food Spoilage: Example of Raw Milk Somatic Cell Count as Target for Reducing Spores Responsible for Spoilage of Fluid Milk — ALJOSA TRMCIC, Sarah I. Murphy, Stephanie N. Masiello Schuette, Rachel Evanowski, Nicole Martin, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-113 Methods for Conducting Challenge Studies in White Pan Bread Inoculated with *Penicillium roqueforti* — SARA LASUER, Jeff Botts, Mary Winger, Corbion, Lenexa, KS, USA

P3-114 Clean Label Preservation System to Control Ropiness Spoilage in Bread — Eelco Heintz, SIMONE POTKAMP, Kerry, Tiel, The Netherlands

P3-115 Withdrawn

Modeling and Risk Assessment

P3-116 Machine Learning-Based Classification of *Salmonella enterica S*erovar Typhimurium Isolates Based on Transcriptomics Data Identifies Signatures of Stress Response — SHRADDHA KARANTH, Abani Pradhan, University of Maryland, College Park, MD, USA

P3-117 Evaluating the Growth of Spoilage Relevant Bacterial Isolates on Baby Spinach — SRIYA SUNIL, Sarah Murphy, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-118 Evaluation of Sources for *Salmonella enterica* Infections Using Genomic Data and Machine Learning — COLLINS TANUI, Edmund Benefo, Abani Pradhan, University of Maryland, College Park, MD, USA

P3-119 A Machine Learning Approach to Identify Key Drivers Influencing Populations of Generic *Escherichia coli* in Surface Waters in Florida — KALINDHI LARIOS, Claudia Ganser, Alan Gutierrez, Alvaro Carmona-Cabrero, Arie Havelaar, Rafael Munoz-Carpena, University of Florida, Gainesville, FL, USA

P3-120 Linking the Genome Data of *Salmonella enterica* Strains Isolated from Chicken Meat in Mexico with Their Virulence Capacity — ANGÉLICA GODÍNEZ-OVIEDO, John P. Bowman, Montserrat Hernández-Iturriaga, Universidad Autonoma de Queretaro, Queretaro, QA, Mexico

P3-121 How Do the Survival Kinetics of Cross-Contaminated *Escherichia coli* O157:H7 Differ in Ground Beef during Thermal Inactivation Process? — HIDEMOTO YABE, Hiroki Abe, Kento Koyama, Shigenobu Koseki, Hokkaido University, Sapporo, Japan

P3-122 Finding the Underlying *Salmonella* Concentration Distribution in Ground Beef in the U.S. for Quantitative Microbial Risk Assessment Purpose — Regis Pouillot, JANE POUZOU, Gavin Fenske, Solenne Costard, Daniel Taylor, Francisco Zagmutt, EpiX Analytics, Fort Collins, CO, USA

P3-123 Modeling the Growth of Shigatoxigenic *E. coli* (STEC), *Salmonella*, and Generic *E. coli* in Raw Pork Considering Background Microflora at 10, 25, and 40°C — MANIRUL HAQUE, Bing Wang, Aime Leandre, Byron Chaves, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-124 *Salmonella* spp. in Peripheral Lymph Nodes of Bovine Origin: A Systematic Review and Meta-Analysis — ILHAMI OKUR, Dayna M. Harhay, John W. Schmidt, Annette O'Connor, Terrance Arthur, Xiang Yang, Omar A. Oyarzabal, Bing Wang, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-125 Identification and Selection of Feed Safety-Related Risk Factors to be Included in the Canadian Food Inspection Agency's Risk Assessment Model for Inedible Rendering Plants — VIRGINIE LACHAPELLE, Genevieve Comeau, Sylvain Quessy, Romina Zanabria, Mohamed Rhouma, Tony van Vonderen, Philip Snelgrove, Djillali Kashi, My-Lien Bosch, John Smillie, Richard Holley, Egan Brockhoff, Marcio Costa, Marie-Lou Gaucher, Younes Chorfi, Manon Racicot, Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

P3-126 What is the Relative Impact of Evidence-Based Risk Factors on a Rendering Plant's Overall Feed Safety Risk? A Quest for Answers through an Expert Elicitation — VIRGINIE LACHAPELLE, Manon Racicot, Genevieve Comeau, Alexandre Leroux, Romina Zanabria, Molly Lynne Noel, Philip Snelgrove, Tony van Vonderen, Richard Holley, John Smillie, Djillali Kashi, Egan Brockhoff, My-Lien Bosch, Younes Chorfi, Marcio Costa, Marie-Lou Gaucher, Mohamed Rhouma, Sylvain Quessy, Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

P3-127 Evaluation of Cooling Rates of Foods in Home Refrigerators and Comparison with FDA Food Code Recommendations — Marina Girbal, DONALD W. SCHAFFNER, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA

P3-128 Quantitative Microbial Risk Assessment for *Salmonella enterica* in Tomatoes — EDMUND BENEFO, Abani Pradhan, University of Maryland, College Park, MD, USA

P3-129 Evaluation of Risk Factors for *Escherichia coli* O157:H7 Contamination in Leafy Greens Irrigated with Alternative Sources of Water — AISHWARYA RAO, Abani Pradhan, University of Maryland, College Park, MD, USA

P3-130 Foodborne Illnesses from Leafy Greens: Attribution and Cost Estimates — XUERUI YANG, Donald Schaffner, Michelle Danyluk, Robert Scharff, Ohio State University, Columbus, OH, USA

P3-131 Modeling the Growth and Survival of *Escherichia coli* on Fresh Strawberries Stored at Different Temperatures — PRACHI PAHARIYA, Derek J. Fisher, Ruplal Choudhary, School of Agricultural Sciences, Southern Illinois University Carbondale, Carbondale, IL, USA

P3-132 Withdrawn

P3-133 Withdrawn

P3-134 Exposure Assessment of *Salmonella* Species in Street-Vended Fresh Cut Fruits and Vegetables in Ibafo, South-Western Nigeria — GABRIEL AKANNI, Olanrewaju E Fayemi, Mountain Top University, Ibafo, Nigeria

P3-135 Buffer Models Linking pH Changes to Acid Concentrations during Cucumber Brine Fermentations — FRED BREIDT, Caitlin Skinner, U.S. Department of Agriculture – ARS, Raleigh, NC, USA

P3-136 Developing an Agent-Based Model to Assess *Listeria* Control Strategies in Retail Stores — YEONJIN JUNG, Chenhao Qian, Cecil Barnett-Neefs, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-137 Withdrawn

P3-138 Compositional Changes in the WA 38 Apple Microbiome during Controlled Atmosphere Cold Storage — ALEXIS HAMILTON, M. Laura Rolon, Jasna Kovac, Faith Critzer, Virginia Tech, Blacksburg, VA, USA

P3-139 Investigating Food Safety Process Parameters for Lacto-Fermented Sauerkraut — JULIA FUKUBA, Amanda Kinchla, University of Massachusetts Amherst, Amherst, MA, USA

P3-140 Modelling the UV-C Inactivation Kinetics and Determination of Fluences Required for Incremental Inactivation of Several Strains of *Listeria monocytogenes* — Stephanie G. Handy, Laura Arvaj, Brahmaiah Pendyala, Ankit Patras, Gisèle LaPointe, SAMPATHKUMAR BALAMURUGAN, Agriculture & Agri-Food Canada, Guelph, ON, Canada

P3-141 Evaluation of Growth in Independent Submissions to the GenomeTrakr Network — MARIA BALKEY, Ruth Timme, Marc Allard, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, College Park, MD, USA

P3-142 Determining the Relevance of Factors for the Occurrence of Listeriosis by Consumptions of Pasteurized Milk, A Low Risk Product — HIROKI ABE, Alberto Garre, Heidy den Besten, Shigenobu Koseki, Marcel Zwietering, Hokkaido University, Sapporo, Japan

P3-143 Protection of the Essential Workforce from Occupationally-Acquired SARS-CoV-2: A Quantitative Risk Model on the Efficacy of Infection Control Interventions in Produce Production and Processing — Derrick Cooper, Julia Sobolik, Jovana Kovacevic, Channah Rock, Elizabeth Sajewski, Lee-Ann Jaykus, JUAN S. LEON, Emory University, Atlanta, GA, USA

P3-144 Environmental Monitoring Data in Food Retail: Development of Analytical Approach for Benchmarking and Risk Assessment — AMANI BABEKIR, Ecolab, Greensboro, NC, USA

P3-145 Performance Assessment of the Canadian Food Inspection Agency's Establishment-Based Risk Assessment Model Outputs for Feed Mills (ERA-Feed Mill Model) — Genevieve Comeau, Alexandre Leroux, VIRGINIE LACHAPELLE, Romina Zanabria, Tamazight Cherifi, Sylvain Quessy, Manon Racicot, Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

Molecular Analytics, Genomics and Microbiomes

P3-146 Whole Genome Sequencing-Based Typing of *Listeria monocytogenes* Isolated from Seafood and Production Environments — Benjamin Duqué, François Gravey, THOMAS BRAUGE, Malvina Lefevre, Estelle Sonnet, Guylaine Leleu, Simon Le Hello, Christophe Soumet, Arnaud Bridier, Graziella Midelet, Aurelie Hanin, ANSES, Laboratory for Food Safety, Bacteriology and Parasitology of Fishery and Aquaculture Products Unit, Boulogne-sur-Mer, France

P3-147 Development of a Simplified Assurance® G.D.S. Workflow for Detection of *Salmonella* in Cocoa — MICHAEL EASTWOOD, Brian Connolly, Charlotte Lindhardt, Lisa John, MilliporeSigma, Bellevue, WA, USA

P3-148 Evaluation of the Ability to Detect *Salmonella* Serovars by Immunomagnetic Concentration and Real Time PCR Detection — MICHAEL EASTWOOD, David Tomas, H.T. Ellis Marschand, Lisa John, MilliporeSigma, Bellevue, WA, USA

P3-149 Characterization of *Salmonella* spp. in Finishing Pigs at Kansas Commercial Swine Farms by Whole Genome Sequencing — KAWANG LI, Olivia Harrison, Jordan Gebhardt, Jason Woodworth, Cassandra Jones, Valentina Trinetta, Kansas State University, Manhattan, KS, USA

P3-150 Whole Genome Sequencing of *Salmonella* from Retail Meats in Chile Reveals Trade-Acquired Along with Locally Acquired *Salmonella* Serovars — Diana Álvarez, Rocio Barron, Sebastián Gutiérrez, Magaly Toro, Elton Burnett, Jorge Olivares-Pacheco, ANDREA MORENO SWITT, Pontificia Universidad Católica de Chile, Santiago, Chile

P3-151 Genomic Analysis of *Vibrio cholerae* Strains Isolated from Cholera Patients in Mexico — JOSE EDUARDO LUCERO-MEJIA, Adrián Gómez-Baltazar, Montserrat Hernandez-Iturriaga, Universidad Autonoma de Queretaro, Queretaro, QA, Mexico

P3-152 Whole Genome Sequencing of *Cronobacter sakazakii* Strain, Sequence Type 40, Isolated from Fresh Produce — IRSHAD SULAIMAN, Nancy Miranda, Steven Simpson, U.S. Food and Drug Administration, Atlanta, GA, USA

P3-153 Comparative Genomics of *Listeria monocytogenes* Strains Isolated from Listeriosis Cases in Ruminants from the Midwest U.S. — HUI ZENG, Maria X. Cardenas-Alvarez, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P3-154 Survival Kinetics of *Salmonella* spp. in Low-Moisture Foods during Long Term Storage — DHARAMDEO SINGH, Carlos Leon Velarde, Nathan Larson, Lawrence Goodridge, University of Guelph, Guelph, ON, Canada

P3-155 Benchmarking Short-Read Assemblers for the Metagenomic Identification of Bacterial Pathogens Using Simulated Bacterial Communities — Zhao Chen, JIANGHONG MENG, University of Maryland, College Park, MD, USA

P3-156 Evaluating the Relationship between Presence of Crystal Protein-Encoding Genes, Expression of Crystal Proteins and Cytotoxicity in *Bacillus cereus* s.s. Isolates — TAEJUNG CHUNG, Cassidy Prince, Kayla Kimble, Abimel Salazar, Grant Harm, Sophia Johler, Jasna Kovac, Department of Food Science, The Pennsylvania State University, University Park, PA, USA

P3-157 Prediction of *Salmonella* Contamination in Surface Water Samples Using Microbiome Data Analyzed with Machine Learning Classifiers — TAEJUNG CHUNG, Runan Yan, Daniel Weller, Jasna Kovac, Department of Food Science, The Pennsylvania State University, University Park, PA, USA

P3-158 16S Microbiome Analysis of Microbial Communities in Food Distribution Centers — ANNA TOWNSEND, Hendrik Den Bakker, Amy Mann, Laura Strawn, Laurel Dunn, University of Georgia, Athens, GA, USA

P3-159 Genetic Characterization of Salmonella Phage vB_SalS-KFSSE for the Construction of a Reporter Phage — DOO-HO CHOI, So-Hui Park, Yu-Bin Jeon, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

P3-160 Microbial Diversity Analysis of Retail Poultry Meat via 16s Community Sequencing — ZACHARY TOBAR, Katie Lee, Alonna Wright, Xunde Li, Dawn Gratalo, Mark Driscoll, David Coil, Maurice Pitesky, University of California, Davis, Davis, CA, USA

P3-161 *Vibiro parahaemolyticus* and *V. vulnificus* Profiles and Microbial Community Assessments of Blue Crabs (*Callinectes sapidus*) and Seawater Harvested from the Maryland Coastal Bays — JASMINE SMALLS, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P3-162 Evolution and Diversity of Chaperone Usher Fimbriae Encoded by *Salmonella* — RACHEL CHENG, Renato Orsi, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-163 Context Matters: Environmental Microbiota of Ice Cream Processing Facilities Affects the Inhibitory Performance of Two Lactic Acid Bacteria Against *Listeria monocytogenes* — M. LAURA ROLON, Tyler Chandross-Cohen, Kerry Kaylegian, Robert Roberts, Jasna Kovac, Penn State University, University Park, PA, USA

P3-164 Native Bacterial Communities Present in Romaine Lettuce and Their Interactions with *Listeria monocytogenes* — CHAO LIAO, Luxin Wang, University of California, Davis, Davis, CA, USA

P3-165 Microbiome Analysis of Raw Honey Reveals Important Factors Influencing the Bacterial and Fungal Communities — ZIRUI RAY XIONG, Jonathan Sogin, Randy Worobo, Cornell University, Ithaca, NY, USA

P3-166 Impact of Chocolate Coating on the Survival of *Salmonella* on Dried Nuts and Fruits — ANDREW KEARNEY, Ian Hildebrandt, Bradley Marks, Michigan State University, East Lansing, MI, USA

P3-167 Bacterial Diversity of Different Melon Types Grown in Different Regions — MADISON GOFORTH, Victoria Obergh, Kerry Cooper, The University of Arizona, Tucson, AZ, USA

P3-168 Treated Soil Organic Amendments Alter Produce Phyllosphere Microbiome but Do Not Increase the Risk of Contamination with Foodborne Pathogens — JAVAD BAROUEI, Mahta Moussavi, Tesfamichael Kebrom, Seyed Abdollah Mousavi, Haimanote Bayabil, Almoutaz El-Hassan, Ripendra Awal, Ali Fares, Prairie View A&M University, Prairie View, TX, USA

P3-169 Identification of the Genes of *Salmonella* Enteritidis That Contributes to Attachment and Biofilm Formation — SEULGI LEE, Jinru Chen, The University of Georgia, Griffin, GA, USA

P3-170 Role of SNRNAS in Biofilm Formation in *Salmonella enterica* Serovars Typhimurium and Enteritidis — GOUTAM BANERJEE, Pritam Chattopadhyay, Pratik Banerjee, University of Illinois Urbana-Champaign, Urbana, IL, USA

P3-171 Identification and Characterization of Toxin-Producing Genes in *Bacillus cereus* Group Genome Assemblies — MARKEIA SCRUGGS, Sarita Raengpradub, Cameron Parsons, Angela Nguyen, Mérieux NutriSciences, Crete, IL, USA

P3-172 Genomic Surveillance of *Bacillus cereus* Group Strains Isolated from Meat and Poultry Products in South Africa — LAURA CARROLL, Rian Pierneef, Aletta Mathole, Abimbola Atanda, Itumeleng Matle, EMBL, Heidelberg, Germany

Packaging

P3-173 Application of Time-Temperature Indicator (TTI) Based on Maillard Reaction for Visual Monitoring of the Quality of Frozen Shrimp and Chicken Under Dynamic Temperature Conditions — SAKI TANAKA, Kento Koyama, Shigenobu Koseki, Hokkaido University, Sapporo, Japan

P3-174 Use of Fish Gelatin Coating and Moisture Scavenging Packaging to Extend the Shelf Life of Fresh Never Frozen and Frozen/Thawed Catfish Fillets — ROBERT CORSINO II, Hunter Songy, Andrea Cerrato, Evelyn Watts, Louisiana State University, Baton Rouge, LA, USA

P3-175 Development and Evaluation of UV-Activated Oxygen Scavenging System Based on Natural Rubber Latex for Food Safety and Quality — DAKURI RAMAKANTH, Konala Akhila, Pradip K. Maji, Kirtiraj K. Gaikwad, Department of Polymer and Process Engineering, Indian Institute of Technology Roorkee, Roorkee, India

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P3-176 Development of Gallic Acid Coated Label as a pH-Sensitive Oxygen Indicator for Smart Food Packaging Applications — KONALA AKHILA, Dakuri Ramakanth, Kirtiraj Gaikwad, Department of Paper Technology, Indian Institute of Technology Roorkee, Roorkee, India

P3-177 Evaluation of Invisishield™ Technology to Reduce *Escherichia coli*, *Listeria monocytogenes*, and *Salmonella enterica* on Blueberries and Tomatoes Using the Antimicrobial Chlorine Dioxide — JASON FRYE, Rebecca Goulter, Angela Morgan, Michael Johnston, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P3-178 Effectiveness of Insect-Repellent Film Encapsulating Essential Oil Mixture Against the Larvae of *Tribolium castaneum* — SI EUN KANG, Heejeong Lee, Su-Hyeon Kim, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

Seafood

P3-179 Chitosan and Epigallocatechin Gallate Grafted Chitosan-Based Composite Films: Antioxidant and Antimicrobial Activities, and Its Application for Shelf-Life Extension of Refrigerated Asian Seabass (*Lates calcarifer*) Slices — AJAY MITTAL, Avtar Singh, Soottawat Benjakul, International Center of Excellence in Seafood Science and Innovation, Faculty of Agro-Industry, Prince of Songkla University, Hat Yai, Thailand

P3-180 Assessment of Traditional Red Swamp Crayfish Boils in Reducing the Prevalence of *Vibrio* spp. — JACK PALILLO, Dixie Mollenkopf, Antoinette Marsh, Thomas Wittum, Stephen Reichley, Michael Palillo, Raphael Malbrue, The Ohio State University College of Public Health, Columbus, OH, USA

P3-181 Determination of Okadaic Acid, Dynophysistoxin-1, Dynophysistoxin-2 and Dynophysistoxin-3 in South Korean Seafood by Liquid Chromatography-Tandem Spectrometry — JONG BIN PARK, Sang Yoo Lee, Su mi Park, Ju Hee Im, Kwang-Sik Choi, Hyang Sook Chun, Food Toxicology Laboratory, School of Food Science and Technology, Chung-Ang University, Anseong, South Korea

P3-182 Fitness and Transcriptomic Analysis of Pathogenic *Vibrio parahaemolyticus* in Seawaters at Different Oyster Harvesting Temperatures — ZHUOSHENG LIU, Chao Liao, Luxin Wang, University of California, Davis, Davis, CA, USA

P3-183 Withdrawn

P3-184 Microbiome Signatures to Determine Oysters' Geographical Region of Origin — Prashant Singh, David Williams, FRANK VELEZ, Ravinder Nagpal, Florida State University, Tallahassee, FL, USA

P3-185 *Aeromonas hydrophila* Biofilm Formation in Aquaponic Water — JENNIFER DORICK, Laurel Dunn, Govindaraj Dev Kumar, University of Georgia, Athens, GA, USA

P3-186 Determination of Spoilage Microbiota of Atlantic White Shrimp (AWS) Using Next Generation Sequencing (NSG) as an Alternative Method to the Standard Quality Evaluation during the Cold Chain — IMRAN AHMAD, Toni-Ann Benjamin, Florida International University, North Miami, FL, USA

P3-187 Using Functional Ice to Reduce Seafood Waste and Its Effect on the Value Chain in Honduras — BET WU, Amit Morey, Mayra Marquez, Auburn University, Auburn, AL, USA

P3-188 Metagenomic Assessment of Human and Animal RNA Viruses in Sanaga Clams, Cameroon — PATRICE BONNY, Julien Schaeffer, Alban Besnard, Marion Desdouits, Jean Justin Essia Ngang, Soizick Le Guyader, Ifremer, Laboratoire de Microbiologie, Nantes, France

P3-189 Survival of Inoculated *Vibrio* spp., *Escherichia coli*, *Listeria monocytogenes* and *Salmonella* spp. on Sugar Kelp during Refrigerated and Ambient Storage — SAMUEL AKOMEA-FREMPONG, Jennifer Perry, Denise Skonberg, University of Maine, Orono, ME, USA

P3-190 Seasonal Effect on Indicator Organisms in Catfish Parts and Catfish Processing — Maria Hidalgo, LAURYN HEIDELBERG, Meredith Maynard, Juan Silva, Shecoya White, Mississippi State University, Mississippi State, MS, USA

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Most-Cited Peer-Reviewed Research Publication Award

This award was established to recognize research teams whose original findings are significantly contributing to the impact of *FPT* and global food safety. The award is based upon the number of citations of a work by others for research articles published five years prior to the year of the IAFP Annual Meeting.

Assessment of Current Practices of Organic Farmers Regarding Biological Soil Amendments of Animal Origin in a Multi-Regional U.S. Study

Alda F. A. Pires, Patricia D. Millner, Jerome Baron, and Michele T. Jay-Russell

Published September–October 2018

Most-Viewed Peer-Reviewed Research Publication Award

This award was established to recognize highly viewed, peer-reviewed research and review papers in addition to general interest papers which are significantly contributing to the impact of *FPT* and global food safety. The award is based upon the number of times a publication that was published over the last two calendar years was viewed.

Holding Fresh-Cut Produce under Refrigeration May Not Prevent Pathogen Growth: Implications for Time-Temperature Control to Reduce Risk

Barbara H. Ingham, Bingzhuo C. Zhao, and Eleanor J. Hanson

Published January–February 2021

Most-Viewed General Interest Publication Award

Artificial Intelligence Opportunities to Improve Food Safety at Retail

Adam Friedlander and Claire Zoellner

Published July–August 2020

The awards will be held for presentation at the IAFP 2022 Editorial Reception in Pittsburgh, PA.

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Madison Goforth
Olivia Haley
Rosa Heydenreich
Minji Hur
Mwarome Jumbale
Amalia Komarudin
Tengfei Li
Tlaleo Marole
David Mugabo
Jennifer Mydosh
Jasmine Smalls
Anand Soorneedi
Saki Tanaka
Kaidi Wang
Zirui Ray Xiong
Lang Yao

PEANUT PROUD SCHOLARSHIP
Sponsored by Peanut Proud

Arpita Aditya

J. MAC GOEPFERT DEVELOPING SCIENTISTS
Sponsored by the IAFP Foundation

TBD

UNDERGRADUATE STUDENT COMPETITION
Sponsored by the IAFP Foundation

TBD

SAMUEL J. CRUMBINE

Sponsored by the Conference for Food Protection, in cooperation with American Academy of Sanitarians, American Public Health Association, Association of Food & Drug Officials, Food Marketing Institute, Foodservice Packaging Institute, International Association for Food Protection, National Association of County and City Health Officials, National Environmental Health Association, National Restaurant Association, NSF International, and Underwriters Laboratories

None given

ABOUT THE AWARD RECIPIENTS

Black Pearl Award

HelloFresh

Berlin, Germany

HelloFresh is a global food solutions group and the world's leading meal-kit company. The HelloFresh Group consists of six direct-to-consumer brands that provide customers with high quality food and recipes for any meal occasion. Globally, these brands include HelloFresh, Green Chef, EveryPlate, Chefs Plate, Factor, and Youfoodz.

HelloFresh is on a mission to change the way people eat forever. Central to that mission is ensuring that all teams and partners follow the strictest protocols every day so that each meal kit or food item delivered is safe, consistent, and delicious.

As an industry-leading food solutions group and America's biggest meal-kit provider, HelloFresh operates with the highest standards for food safety and quality, and is continuously improving its processes, trainings, and systems.

HelloFresh was founded in Berlin, Germany in November 2011 and operates in 17 markets. In Q1 2022, HelloFresh delivered 287 million meals and reached 8.52 million active customers.

Sponsored by F&H FOOD EQUIPMENT COMPANY

FELLOW AWARD

David Blomquist
Hastings, Minnesota

Mr. David Blomquist is a recipient of the 2022 IAFP Fellow Award. Mr. Blomquist is an independent consultant for DFB Consulting in Hastings, Minnesota. He joined the Klenzade Division of Ecolab as a Quality Management Consultant in 1989. He worked for Ecolab for nearly 27 years, retiring in 2016. During this time, Mr. Blomquist traveled to nearly 1,000 plants helping to resolve cleaning and sanitation issues. In addition, he provided support to the North American Ecolab Sales force, answering questions for literally thousands of dairy, food, and beverage plants every year.

Mr. Blomquist grew up on a dairy farm near Almelund, Minnesota, north of the Minneapolis/St. Paul metro area. He graduated from the University of Minnesota in 1972.

After graduation, Mr. Blomquist, along with his wife, Cindy, worked for the Peace Corps in Casablanca, Morocco, at *le Laboratoire d'Analyses et de Recherches Chimique* as a chemist for the Moroccan equivalent of the U.S. Food and Drug Administration (FDA) testing lab. Upon his return to the U.S., He worked as a quality control supervisor at Dalbo Cheese in Dalbo, Minnesota, then as a microbiologist for Tony's Pizza Service in Salina, Kansas. He also held several other positions at Tony's (part of Schwan's Sales Enterprises) as Quality Assurance (QA) Director and as QA Manager-Marshall Operations. He also served as Vice President of QA & Research & Development at Sunstate Dairy in Tampa, Florida.

Mr. Blomquist joined IAFP in 1992 and is an active Member. He received the IAFP Honorary Life Membership Award in 2017 and the Sanitarian Award in 2013. He is a past chair of both the Dairy Quality and Safety PDG and the Sanitation and Hygiene PDG. He is also a member of several other PDGs, including the Sanitary Equipment and Facility Design PDG. He is a frequent presenter at IAFP Annual Meetings and other technical symposia. In 2014, Mr. Blomquist, along with other IAFP Members, formed the Minnesota Food Protection Association, an IAFP Affiliate. He served as its first president and watched the organization grow to more than 100 members throughout its first few years.

As a volunteer for numerous projects, Mr. Blomquist is currently working on a cheese project with a Ph.D. student in Ethiopia who is developing procedures for a small dairy in the country.

James Dickson
Ames, Iowa

Dr. James S. Dickson is a recipient of the 2022 IAFP Fellow Award. Dr. Dickson is a Professor in the Department of Animal Science and the Inter-Departmental Program in Microbiology at Iowa State University in Ames. He also holds an adjunct appointment in the Department of Epidemiology at the University of Iowa in Iowa City. Throughout his time at Iowa State University, he has held various positions, including as Chair of the Department of Microbiology, Professor-in-Charge of the Iowa State portion of the Tri-State Food Safety Consortium, and Interim Director of the Institut for Food Safety and Food Security. He is actively engaged in all three components of the Land Grant University mission: Education, Research, and Outreach.

Dr. Dickson's research focuses on the control of bacteria of public health significance in foods of animal origin. Prior to his appointment at Iowa State University in 1993, he was employed by the USDA-ARS as a Research Food Technologist and lead scientist of the Meat Safety Assurance Program, located at the Roman L. Hruska U.S. Meat Animal Research Center in Clay Center, Nebraska, for more than five years. He was previously employed in the food industry for three years before joining USDA-ARS.

An active member of IAFP since joining in 1987, Dr. Dickson served as IAFP President in 2002, and on several IAFP Committees and PDGs, including the editorial boards for *Food Protection Trends* and the *Journal of Food Protection*. He received the Maurice Weber Laboratorian Award in 2013.

Dr. Dickson is a Fellow in the American Academy of Microbiology. He is active in the American Society for Microbiology and is a Certified Food Technologist with the Institute of Food Technologists. He currently serves on the USDA National Advisory Committee for Microbiological Criteria for Foods. He is also chair of the U.S. ISO Technical Advisory Group TC 34/SC 17, which addresses the ISO standards relating to food safety.

Dr. Dickson received a bachelor's in Microbiology from Clemson University, a master's in Dairy Science (Manufacturing) from the University of Georgia, and his Ph.D. in Food Science and Technology from the University of Nebraska – Lincoln.

FELLOW AWARD

Lynn McMullen
Edmonton, Alberta,Canada

Dr. Lynn McMullen is the recipient of the 2022 Fellow Award. Dr. McMullen is a Professor in the Department of Agricultural, Food and Nutritional Science at the University of Alberta in Edmonton, Alberta, where she instructs students in B.Sc., M.Sc., and Ph.D. programs and has an active food safety research program.

Dr. McMullen has extensive experience in food safety research and education. Her scientific research interests include understanding stress tolerance and heat resistance in *Escherichia coli* and *Listeria monocytogenes* in food environments during processing and storage, developing and understanding novel approaches to meat preservation with lactic acid bacteria and their bacteriocins, and developing novel approaches to detection of foodborne pathogens.

Dr. McMullen was responsible for the establishment of a biosafety level 2 meat processing facility at Agri-Food Discovery Place at the University of Alberta. She conceived the idea for the Meat Safety and Processing Research Unit, and secured national and provincial government and industry funding to build and equip the facility. The facility allows research with foodborne pathogens in conditions that simulate industrial practice and has not only supported ground-breaking fundamental research but also provides facilities for joint research between industrial and academic partners. Dr. McMullen was also co-founder of CanBiocin Inc., a biotechnology company that commercialized research on use of bacteriocins to control *Listeria monocytogenes* in ready-to-eat meats.

An active member of IAFP since 1992, Dr. McMullen chaired the Program Committee for IAFP 2003 in New Orleans and was Co-Chair of the Local Arrangements Committee for IAFP 2006 in Calgary. She has served on the Affiliate Council for more than 20 years, representing the Alberta Association for Food Protection and organizing many Affiliate meetings throughout the years. She received the Elmer Marth Educator Award in 2020.

Dr. McMullen obtained her Ph.D. from the University of Alberta and started her academic career at the University of Alberta in 1994. She teaches undergraduate and graduate courses in food microbiology, food safety, and food fermentations. She also contributes to courses on science communication and animal health. She has graduated more than 50 M.Sc. and Ph.D. students who now work in academia, government, and industry positions.

George-John Nychas
Athens, Greece

Dr. George-John Nychas is a recipient of the 2022 IAFP Fellow Award. Dr. Nychas is Director of the Laboratory of Microbiology and Biotechnology of Foods of the Agricultural University of Athens, Greece, where he has taught Food Microbiology and Food Safety since 1994.

Dr. Nychas has been actively involved with food safety and consumer protection issues throughout his food safety career, serving as President of the Greek Food Authority; as a member of the Biohazard group of the European Food Safety Authority (EFSA); as an expert in Predictive Modelling/ Quantitative Risk Assessment (QRA); as a Member of the Advisory Forum of the European Food Safety Authority (EFSA); and as a member of the “Food Safety Panel – Prevention & Control of BSE/ TSE & of other Biological Hazards” of the European Parliament.

Dr. Nychas is a member of the pool of scientific advisors on risk assessment for the Directorate–General for Health and Food Safety (DG SANCO), and was nominated Chairman of the Scientific Working Group in Food Safety of the European Technological Platform. He has been involved in a wide range of activities, with a focus on fostering international collaboration, including transatlantic collaboration between the EU and U.S. in food safety. This is achieved through European Research programs in which he either coordinated or participated (six and twenty respectively) that dealt with microbial physiology of pathogenic and spoilage organisms in different biotic or abiotic environments.

An IAFP Member since 2007, Dr. Nychas received the IAFP International Leadership Award in 2017. He has authored more than 200 publications and has approximately 17,000 citations.

FELLOW AWARD

Manan Sharma
Beltsville, Maryland

Dr. Manan Sharma is a recipient of the 2022 IAFP Fellow Award. Dr. Sharma is Lead Scientist and Research Microbiologist in the Environmental Microbial and Food Safety Laboratory for the United States Department of Agriculture, Agricultural Research Service (USDA ARS). His research focuses on produce safety, including the survival of enteric pathogens in biological soil amendments and irrigation water, and on fruit and vegetable commodities.

Dr. Sharma has authored or co-authored 72 peer-reviewed articles and seven book chapters. He has mentored numerous high school and undergraduate students, and worked with graduate students and post-doctoral research associates at USDA ARS.

Dr. Sharma joined IAFP in 2001 and received the Larry Beuchat Young Researcher Award in 2011 and the Maurice Weber Laboratorian Award in 2018. During his membership, he has served as Chair of the *Journal of Food Protection* Management Committee; as President of the Capital Area Food Protection Association; and as Secretary of the Indian Association for Food Protection in North America. Dr. Sharma currently serves on the Editorial Board for the *Journal of Food Protection,* as well as IAFP's Program Committee, the Webinar Committee, and the Diversity, Equity and Inclusion Council.

Dr. Sharma received his B.S. in Microbiology and Cell Science from the University of Florida, and his M.S. and Ph.D. in Food Science and Technology from the University of Georgia. He is a recipient of the 2009 USDA ARS Beltsville Area Early Career Scientist Award and serves on the Editorial Board for *Applied and Environmental Microbiology.*

PRESIDENT'S LIFETIME ACHIEVEMENT AWARD

Katherine M. J. Swanson
Mendota Heights, Minnesota

Dr. Katherine "Katie" Swanson is the recipient of the 2022 IAFP President's Lifetime Achievement Award. This award is given at the discretion of the Association's President to recognize an individual who has made a lasting impact on "Advancing Food Safety Worldwide" through a lifetime of professional achievements in food protection.

Dr. Swanson's 40-year food safety career began investigating "new" technology, microwave inactivation of *Salmonella* in eggs, earning her B.S. with distinction at the University of Delaware. Her studies for her M.S. continued at the University of Minnesota researching the fate of aflatoxin during single cell protein production. She gained industry experience at Economics Laboratory as a microbiology consultant for food and medical device manufacturers before returning to Frank Busta's lab for research on *Bacillus cereus* growth and inactivation models and earning her Ph.D.

Dr. Swanson served briefly as an assistant professor of food microbiology at Cornell University and as a senior microbiologist for 3M ATP and Petrifilm™ applications before honing her prevention-focused food safety expertise at The Pillsbury Company. There, she worked with food safety pioneers Howard Bauman, Bill Sperber, and an incredible team, progressing to Global Product Safety Director at General Mills. She returned to Ecolab in 2004 as Vice President of Food Safety. In 2013, she joined the Food Safety Preventive Control Alliance as Program Manager for Curriculum Development and Executive Editor for the FDA's recognized standardized curriculum for meeting *Food Safety Preventive Controls for Human Food* regulation requirements.

Dr. Swanson served as IAFP President in 2013, after joining IAFP in 1979 as a Student Member and in 1980 as a Member. She served on the *Journal of Food Protection* Editorial Board for 12 years; on the *Food Protection Trends* Editorial Board for three years; and on numerous IAFP Award Selection Committees and organizing committees for meetings outside the U.S. She received the GMA Food Safety Award in 2003; the IAFP Fellow Award in 2015; and the Honorary Life Membership Award in 2017.

Dr. Swanson has written and edited numerous chapters, reports, and papers, and served on influential committees, including the International Commission on Microbiological Specifications for Foods (ICMSF) (as Past Secretary); the National Advisory Committee on Microbiological Criteria for Foods (NACMCF); and the National Academies of Science Committees (NAS).

Now retired, Dr. Swanson enjoys genealogy research, travel, and needlework ignored for many years.

HONORARY LIFE MEMBERSHIP AWARD

Zeb E Blanton, Jr.
Longwood, Florida

Mr. Zeb E Blanton, Jr. is a recipient of the 2022 Honorary Life Membership Award. Mr. Blanton is currently the Global Technical Manager for SGS North America and the Global Food Team. His responsibilities include all 2nd party food auditing programs globally. Prior to this position, he oversaw SGS's GFSI, and its 2nd and 3rd Party Audit and Inspection Programs operating in more than 32 countries.

Mr. Blanton has more than 40 years of experience in the food industry, including serving as a District Supervisor with the Florida Department of Agriculture where he supervised the inspection staff in 10 counties and more than 3,500 establishments.

Since joining IAFP in 2000, Mr. Blanton has been active in several PDGs and served on the following committees: IAFP Foundation Committee (Member 2005–2009, Advisor since 2014); the IAFP Membership Committee (Chair in 2012–2014 and 2018–2020); and the IAFP Constitution and Bylaws Committee (Chair in 2010–2012). Since 1993, he has been an active member of the Florida Association for Food Protection, serving on the Board of Directors as President in 2002 and 2003. In 2014, he received the IAFP Harold Barnum Industry Award.

Mr. Blanton attributes a large portion of his professional development and career advancement over the past 30 years to the support of both the IAFP and FAFP associations.

Leon Gorris
Nijmegen,
The Netherlands

Dr. Leon Gorris is a recipient of the 2022 Honorary Life Membership Award. Dr. Gorris is a food safety professional from The Netherlands, with 35+ years working experience in food research and food safety management for industry, government, and academia. He was with Unilever for 21 years, stationed in The Netherlands, the United Kingdom and China. Prior to that, he was with the Dutch Ministry of Agriculture in Wageningen for eight years and with Radboud University in Nijmegen for six years. Having retired from full-time employment, Dr. Gorris now shares his expertise for the common good as a food safety consultant for public organizations, contributing to food safety education and capability building.

Internationally, Dr. Gorris is recognized for his expertise in several food safety domains, from general food microbiology to microbial physiology and ecology, food technology, food safety management, food safety legislation, and food safety standards. He has shared his food safety expertise through many organizations, including IAFP, ICMSF JEMRA, ILSI, IUFoST and CIFST. He has held a part-time professorship in food safety microbiology at Wageningen University for 10 years and is currently a registered visiting professor at three universities in China. He has been a member of the ICMSF for 20 years and is its current Secretary and contact for the United Nations (i.e., FAO,WHO, and Codex Alimentarius).

Dr. Gorris has been an active member of IAFP since joining the Association in 1999. He has initiated several ICMSF sessions and workshops at IAFP Annual Meetings and at IAFP-supported international meetings. Dr. Gorris presented the John H. Silliker Lecture at IAFP 2014. He received the IAFP Fellow Award in 2016, the President's Recognition Award in 2006, and the International Leadership Award in 2007. He currently serves on the *Journal of Food Protection's* Editorial Board and is the current Chair of the Water Safety and Quality PDG and Vice Chair of the Membership Committee. He is also a member of several other PDGs and committees and has supported many IAFP conferences around the globe, reaching out to food safety professionals within and outside of North America.

Dr. Gorris holds an M.Sc. in Biology and a Ph.D. in Microbiology from Radboud University in Nijmegen, The Netherlands.

HONORARY LIFE MEMBERSHIP AWARD

Dale Grinstead
Highlands, North Carolina

Dr. Dale Grinstead is a recipient of the 2022 Honorary Life Membership Award. Dr. Grinstead is a Microbiologist with 28 years of industrial R&D experience. He spent his career with Unilever and Diversey, where he advanced to the position of Sr. Technology Fellow. Throughout his career, Dr. Grinstead's responsibilities included providing technical input and guidance on Diversey's food safety programs; serving on the Diversey R&D leadership team; leading the Diversey Technology Council; assisting customers with technical issues; and participating in new product development projects. During his employment with Diversey, Dr. Grinstead supported virtually all sectors of Diversey's business. He retired from Diversey in 2021 and resides in Highlands, North Carolina.

Dr. Grinstead joined Diversey as part of Unilever research where he led the team that conducted the claim support work for antimicrobial personal care products. He also interacted extensively with the U.S. Food and Drug Administration on the regulatory framework for such products. After approximately five years in Unilever Research, Dr. Grinstead transferred to the Diversey division of Unilever, where he supported the Food and Beverage R&D program and led the North American Microbiology team. In 2005, Dr. Grinstead relocated to Racine, Wisconsin, where his focus was on supporting food safety programs for the retail and food service teams.

Although "nominally" retired, Dr. Grinstead continues to stay active in food safety through some consulting work as well as serving on the Adjunct Faculty in food science departments at Clemson, Purdue, and Utah State Universities. He has remained active in various professional associations, most notably with IAFP and the Conference for Food Protection.

A member of IAFP for nearly 30 years, Dr. Grinstead served as Chair of the Hygiene and Sanitation PDG; was a member of the Nominating Committee and various award committees; and a member of the Program Committee from 2014–2017. He also served on the Editorial Board for *Food Protection Trends*. He received the Harry Haverland Citation Award in 2021 and the IAFP Fellow Award in 2017.

Dr. Grinstead received his B.S. and M.S. from Iowa State University and his Ph.D. from Clemson University. In retirement, his hobbies include fishing, reading, enjoying time in the mountains – and trying to keep his cats from clawing the sofa.

Paul Hall
Lakeland, Florida

Dr. Paul Anthony Hall is a recipient of the 2022 IAFP Honorary Life Membership Award. Dr. Hall is President of AIV Microbiology and Food Safety Consultants, Inc. in Lakeland, Florida, providing expert food safety and quality consulting solutions to the industry.

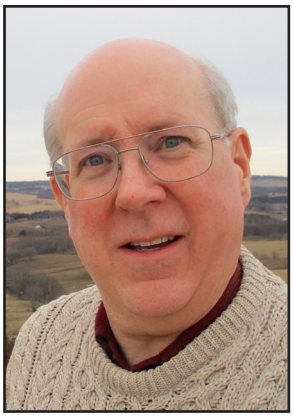
Throughout his professional career, Dr. Hall has held a number of leadership positions in the food and beverage industry, his most recent as Vice President of Food Safety and Quality at Flying Food Group, a company dedicated to providing high quality, wholesome meals to the airline and retail industries. Other leadership positions include Vice President of Global Food Safety for ConAgra Foods; Vice President of Global Business Development for Matrix MicroScience, Inc.; and a 17-year career at Kraft Foods where his last position was Chief Microbiology and Food Safety Officer. Dr. Hall also held positions as Microbiology Manager in Corporate Research and Development for Anheuser Busch Companies, Inc. and in Central Research at Ralston Purina Company, both headquartered in St. Louis, Missouri.

An IAFP Member since 1983, Dr. Hall served as IAFP President in 2004 and has actively participated in various functions over many years. He delivered the Ivan Parkin Lecture at IAFP 2009 – one of the highest honors bestowed by the Association. Throughout his membership, he has been a member of numerous PDGs and served on many award selection committees, as well as the *Journal of Food Protection* Management Committee, and the Program, Foundation, and Nominating Committees. He received the IAFP Harry Haverland Citation Award in 2013; the President's Recognition Award in 2010; the IAFP Fellow Award in 2007; and the Harold Barnum Industry Award in 2006.

Dr. Hall's involvement in other professional organizations include the International Life Sciences Institute; the University of Georgia Center for Food Safety; the American Society for Microbiology; the Institute of Food Technologists; the Grocery Manufacturers Association; and the International Dairy Foods Association. He has served on the editorial board for a number of scientific publications, including the *Journal of Rapid Methods and Automation in Microbiology* and *Food Safety Magazine*.

Dr. Hall holds a bachelor's in Microbiology from the University of Missouri in St. Louis; a master's in Technology Management from Washington University in St. Louis; and a Ph.D. in Quality Management from LaSalle University. He has lectured extensively around the world on microbiological food safety, HACCP, rapid testing and detection methods, and microbiological risk management. Dr. Hall received the coveted Achievement Award from the National Center for Food Safety and Technology in 2009 for outstanding contributions to food safety across government, academia, and industry. That year, he also delivered the prestigious Paul A. Hartman Memorial Lecture at the 29th Annual KSU International Symposium/Workshop on Rapid Methods and Automation in Microbiology.

HONORARY LIFE MEMBERSHIP AWARD



Elliot T. Ryser
East Lansing, Michigan

Dr. Elliot Ryser is a recipient of the 2022 Honorary Life Membership Award. Dr. Ryser joined the Department of Food Science and Human Nutrition at Michigan State University in East Lansing in 1998 and will retire as Professor Emeritus on August 15, 2022, after 24 years of service. A well-recognized expert on *Listeria*, his later research focused on cross-contamination and quantifying bacterial transfer during slicing of deli meats and pilot plant-scale production of fresh-cut fruits and vegetables, with his findings having refined various risk assessments. Prior to joining Michigan State University, he held research positions at INRA (Jouy-en-Josas, France); Silliker Laboratories; and the University of Vermont.

Throughout his academic career, Dr. Ryser has advised/co-advised 80 graduate students, with 11 Ph.D. and 17 M.S. as major professor, six of whom received a total of eight IAFP Developing Scientist Awards. He has authored/co-authored/co-edited three books, 36 book chapters, and 135 peer-reviewed research articles (62 published in the *Journal of Food Protection* since 1984), along with 249 abstracts with 151 of them presented at IAFP Annual Meetings since 1985.

Dr. Ryser joined IAFP in 1980. He served as Co-Scientific Editor for the *Journal of Food Protection* from 2006 to 2021 and on both the *JFP* Management Committee and the *JFP* Editorial Board. He has also served on several award selection committees and is a member of numerous PDGs. In recognition of his many accomplishments and continued service, Dr. Ryser received the Harry Haverland Citation Award in 2016; the GMA Food Safety Award in 2015; the Maurice Weber Laboratorian Award and the President's Recognition Award, both in 2011; the IAFP Fellow Award in 2010; the Elmer Marth Educator Award in 2007; and the Developing Scientist Award in both 1987 and 1986.

Dr. Ryser holds a B.S. in Bacteriology and an M.S. and Ph.D. in Food Science from the University of Wisconsin, under the leadership of Dr. Elmer H. Marth.

Edith Wilkin
Castle Rock, Colorado

Ms. Edith Wilkin is a recipient of the 2022 IAFP Honorary Life Membership Award. Ms. Wilkin is a retired food microbiologist. Her career began in laboratory management, moving into plant operations and gaining practical knowledge and expertise in Quality, Food Safety and Regulatory Compliance. She retired from Leprino Foods in 2020 as Vice President & Fellow in Food Safety after 40 years. Throughout her career, she established Quality Systems and Food Safety policies, procedures, and personnel education. She capped her career with a focus on pathogen control and process validations.

Ms. Wilkin joined IAFP in 1993 and has served in many leadership roles, including Chair of the Low Water Activity Foods PDG; the Election Committee; the Tellers Committee; the Harold Barnum Food Safety Award Selection Committee; and the *Journal of Food Protection* Management Committee. She has also presented several talks and participated on roundtable discussions at IAFP Annual Meetings and other industry conferences.

Ms. Wilkin served as Chair of ILSI-North America's Microbiology Committee; Vice Chair of the Innovation Center for the U.S. Dairy's Food Safety Operating Committee; and Vice Chair of the Scientific Advisory Committee of the NCIMS. She is a Trainer of Trainers for the FSPCA's Preventive Controls for Human Foods course and contributed to the development of its Sanitation and Supplier Management training materials. Along the way, she has mentored and contributed to the success of many of our industry's brightest. Additionally, Ms. Wilkin is known for her collaboration with industry, academics, and regulators to develop and teach pathogen control and traceability best practices.

Ms. Wilkin holds a bachelor's in Biological Sciences with a microbiology focus and a master's in Food Microbiology from the University of Missouri, Columbia, where she was inducted into the Gamma Sigma Delta – Agriculture's Honor Society.

HARRY HAVERLAND CITATION AWARD

Francisco Diez-Gonzalez
Athens, Georgia

Dr. Francisco Diez-Gonzalez is this year's recipient of the Harry Haverland Citation Award. This award honors Dr. Diez-Gonzalez for his 22 years of dedication to the Association's ideals and objectives. He is the Director of the Center for Food Safety and a Professor in the Department of Food Science and Technology at the University of Georgia in Athens, joining in 2016. As Center Director, he provides leadership to one of the premier academic food safety research institutions and engages with private and public sector stakeholders. Dr. Diez-Gonzalez has conducted academic research for 26 years in food safety microbiology. Before joining UGA, he was a faculty member in the Department of Food Science and Nutrition at the University of Minnesota, conducting research and teaching for 17 years.

Dr. Diez-Gonzalez has been actively involved in IAFP activities since 2000, attending 16 Annual Meetings and receiving the IAFP Fellow Award in 2019. He has served on the Planning Committee, the Nominating Committee, the Fellows Award Selection Committee, and the *Food Protection Trends* Management Committee. He has published regularly in the *Journal of Food Protection* and presented at IAFP Annual Meetings. He was one of the founding members of the Minnesota Food Protection Association and has been an invited speaker at the Mexico Association for Food Protection's annual conference.

Dr. Diez-Gonzalez obtained a B.S. in Food Technology from the ITESM in Queretaro, Mexico. He earned both his M.S. and Ph.D. in Food Science from Cornell University. He is a member of the USDA's NACMCF of foodborne bacteria in different food commodities and has authored more than 100 peer-reviewed articles and 13 book chapters.

Sponsored by eurofins

FOOD SAFETY INNOVATION AWARD

bioMérieux
Chicago, Illinois

bioMérieux is the recipient of the 2022 IAFP Food Safety Innovation Award for the development of Predictive Diagnostics, its innovative new approach to food safety and quality testing. At its core, Predictive Diagnostics harnesses the power of complex data to provide tangible microbiology solutions for bioMérieux customers.

By utilizing customer data as a blueprint to identify and target potential issues, bioMérieux is evolving the philosophy of food safety from detect-and-respond to proactive prevention. Predictive Diagnostics enables safer products and consumers, and also protects brand reputations by shielding manufacturers from liability or compliance concerns.

Predictive Diagnostics adapts to any product, process, or facility. Scientific experts work closely with manufacturers to create comprehensive, customized, and efficient plans for minimizing financial and safety risk at every level of their organization.

bioMérieux is honored that its Predictive Diagnostics is being recognized with this award, which represents the hard work of the people behind the science. This signals a bold shift for the food safety and quality community, and is a game changer in the way we work as an industry.

Sponsored by Walmart

INTERNATIONAL LEADERSHIP AWARD

Arie Havelaar
Gainesville, Florida

The 2022 International Leadership Award goes to Dr. Arie Havelaar for his dedication to the high ideals and objectives of IAFP and his promotion of the mission of the Association in countries outside the U.S. and Canada. Dr. Havelaar is a Professor of Global Food Safety and Zoonoses at the Emerging Pathogens Institute, the Food Systems Institute, and the Animal Sciences Department at the University of Florida in Gainesville. He is a microbiologist and epidemiologist specializing in risk assessment and disease burden estimation of foodborne pathogens.

Dr. Havelaar's work initially focused on the safety of drinking and recreational water, and he became active in food safety in the 1990s. Throughout his career, he has actively promoted international activities, supporting WHO, FAO and the European Food Safety Authority in numerous activities. Dr. Havelaar has chaired the WHO Foodborne Disease Burden Epidemiology Reference Group that published the first-ever estimates of the global burden of foodborne diseases in 2015. His current focus is on promoting food safety in low- and middle-income countries.

Dr. Havelaar first joined IAFP in 2008 and currently serves on the *Journal of Food Protection's* Editorial Board. He is also a member of several PDGs.

Dr. Havelaar received an M.Sc. in Chemical Engineering (Hons) from the Delft University of Technology; an M.Sc. in Epidemiology from the Netherlands Institute for Health Sciences, Erasmus University; and a Ph.D. in Microbiology from the Utrecht University, all in the Netherlands.

Sponsored by FSNS® Food Safety Net Services

FOOD SAFETY AWARD

Ann Marie McNamara
Hoffman Estates, Illinois

The recipient of the 2022 Food Safety Award is Dr. Ann Marie McNamara, Vice President of Food Safety at US Foods. Dr. McNamara's food safety career has focused on proactive planning and a risk- and science-based approach to prioritizing interventions. She has made significant contributions to food safety in government, manufacturing, food service, and retail.

As Director of Microbiology, Dr. McNamara brought a public health perspective to the USDA FSIS. She helped lead FSIS's response to the Jack in the Box *E. coli* outbreak; co-authored the HACCP/ Pathogen Reduction Rule; and received the Secretary of Agriculture's Superior Service Award five times. As Sara Lee's Vice President of Food Safety, Dr. McNamara and her team developed a *Listeria* control program that became part of AMI's *Listeria* Workshop. Dr. Dave Theno selected her as Vice President, Food Safety, for Jack in the Box, where she developed a comprehensive PCR-based testing program that was less expensive, faster, and more protective.

As chair of the Conference for Food Protection Committee, Dr. McNamara laid the groundwork for a national database of health inspection reports. She worked with Hazel Analytics to turn this blueprint into a commercial product that is the leading database of its kind.

Dr. McNamara joined IAFP in 1996. She presented the John H. Silliker lecture at IAFP 2018 and received the IAFP Fellow Award in 2012 and *Food Safety Magazine's* Food Safety Award in 2014. She served on the *Journal of Food Protection's* Editorial Board, the IAFP Program Committee, and is a member of several PDGs.

Dr. McNamara holds a Ph.D. from the University of Pittsburgh and completed her post-doc at the CDC.

Sponsored by CBA Consumer Brands Association

FROZEN FOOD FOUNDATION FREEZING RESEARCH AWARD

Jeffrey Farber
Guelph, Ontario, Canada

Dr. Jeff Farber is the recipient of the 2022 Frozen Food Foundation Freezing Research Award. This award honors an individual, group, or organization for preeminence and outstanding contributions to research that impacts food safety attributes of freezing.

Dr. Farber is the Director of an international consulting firm, which conducts food safety consulting with various organizations and countries. In addition, he is a senior advisor for Index Biosystems, a Canadian biotechnology company working in the area of food traceability and authenticity. Dr. Farber is also an Adjunct Professor and member of the graduate faculty in the Department of Food Science at the University of Guelph.

Dr. Farber most recently was employed as a Full Professor in the Department of Food Science at the University of Guelph where he was Director of the Canadian Research Institute for Food Safety and head of the Master's Program in Food Safety and Quality Assurance. Prior to that, he was the Director of the Bureau of Microbial Hazards in the Food Directorate of Health Canada, where he led a group of approximately 60 people working in various areas of microbial food safety, and was instrumental in advancing the development of policy approaches on emerging microbial food safety issues in Canada and at a global level.

An IAFP Member since 1992, Dr. Farber served as IAFP President in 2006. He received both the Association's Honorary Life Membership Award and the Ewen C.D. Todd Control of Foodborne Illness Award in 2020, the IAFP Fellow Award in 2014, the Harry Haverland Citation Award in 2009, and the President's Recognition Award in 2009. Dr. Farber served many years on both the Editorial Board and the Management Committee for the *Journal of Food Protection* and has served on the European Organization Committee and the IAFP Program Committee. He has also served on numerous Award Selection Committees. He currently serves as Content Editor for *IAFP Report*.

Dr. Farber was Associate Editor of the *International Journal of Food Microbiology* for many years and has been on numerous journal editorial boards. He is the Executive Director of the International Commission on Microbiological Specifications for Foods (ICMSF), a leading global think tank on emerging food safety concerns. He also has extensive working experience at the international level, with organizations such as FAO, WHO, and Codex Alimentarius. He was recently appointed to the newly-formed Science and Technology Advisory Group (STAG), under the umbrella of GFSI.

Dr. Farber has received numerous personal and team awards, most recently being nominated as a Fellow for The International Union of Food Science and Technology. In 2009, Dr. Farber received one of the highest awards presented to Federal Public Health Officials, the Prime Minister's Outstanding Achievement Award, for his work as the lead scientist for Health Canada on the deli-meat listeriosis outbreak. He also was recently honored for his contributions to both the understanding of *Listeria* and the advancement of food safety, by having a new species of *Listeria* named after him – *Listeria farberi*.

Dr. Farber has authored more than 180 publications and numerous book chapters and has edited five books.

Sponsored by Frozen Food Foundation

MAURICE WEBER LABORATORIAN AWARD

Kalmia Kniel
Newark, Delaware

Dr. Kalmia "Kali" Kniel is the recipient of the 2022 Maurice Weber Laboratorian Award. This award recognizes an IAFP Member for dedicated and exceptional contributions in the laboratory, and commitment to the development and/or application of innovative and practical analytical approaches in support of food safety. Dr. Kniel is a Professor in the Department of Animal and Food Sciences at the University of Delaware in Newark. Her current teaching responsibilities include courses on aspects of epidemiology and foodborne disease; food microbiology; controversial and social issues of food science; and food security. Each year at the university, Dr. Kniel introduces more than 500 students to the complexity of the food supply chain, where they gain an appreciation for global food production, quality, and safety. Dr. Kniel is passionate about scholarly, lab-based, and field research.

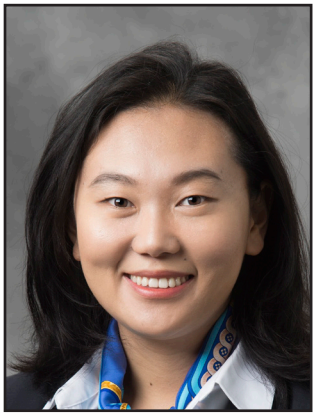
Dr. Kniel serves as the Co-Chair of the One Health Unique Strength Program at the College of Agriculture and Natural Resources and directs the Center for Environmental and Wastewater Epidemiological Research. She is a co-author on the *Food Microbiology: An Introduction* textbook. Along with her students, she has co-authored more than 100 scientific publications and more than 170 published abstracts for presentations. In 2015, Dr. Kniel received the Outstanding Teaching and Advising Award within the College of Agriculture and Natural Resources at the University of Delaware. In 2020, she was awarded the Outstanding Researcher Award within the College of Agriculture and Natural Resources at the university.

Dr. Kniel joined IAFP in 1999 and served as the Association's President in 2020. She currently serves on the *Journal of Food Protection* Editorial Board and served on the *Food Protection Trends* Editorial Board. She has also served on the IAFP Program Committee; on many award selection committees; and is a member of numerous PDGs. She received the President's Recognition Award in 2019 and the Elmer Marth Educator Award in 2015.

Dr. Kniel is involved with the Institute of Food Technologists (IFT) and the American Society for Microbiology (ASM).

Sponsored by The Fred and Elizabeth Weber Trust

LARRY BEUCHAT YOUNG RESEARCHER AWARD



Yaohua "Betty" Feng
West Lafayette, Indiana

Dr. Yaohua "Betty" Feng is the recipient of the 2022 Larry Beuchat Young Researcher Award, which recognizes a young researcher who has shown outstanding ability and professional promise in their career.

Dr. Feng is an Assistant Professor and Extension Specialist of Food Safety in the Department of Food Science at Purdue University in West Lafayette, Indiana. Her research program uses a sociological approach to explore cultural, social, and environmental factors that affect food safety behaviors.

Dr. Feng's research identifies barriers to understanding food safety risks in consumer kitchens; develops strategies that empower food handlers to make science-based decisions; and increases food safety knowledge and best-practice compliance of consumers, food handlers, and farmers.

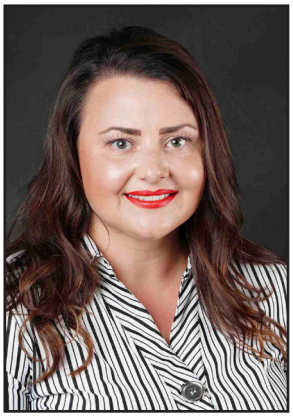
Dr. Feng received the Purdue Societal Impact Fellow in 2021; the Purdue PK-12 Emerging Faculty Award in 2020; and the Purdue Scholarship of Engagement Fellow Award in 2019. She is a current committee member on the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) for the U.S. Department of Agriculture.

Dr. Feng joined IAFP in 2012. She currently serves on the Editorial Board for the *Journal of Food Protection* and the Management Committee for *Food Protection Trends.* She has been actively involved in several IAFP PDGs and has organized/co-organized several well-regarded symposia addressing food safety education at IAFP Annual Meetings.

Dr. Feng holds three degrees in Food Science: an M.S. and a Ph.D. from the University of California, Davis, and a B.E. from South China University of Technology.

Sponsored by BIOMÉRIEUX

JAMES M. JAY DIVERSITY IN FOOD SAFETY AWARD



Haley Oliver
West Lafayette, Indiana

Dr. Haley Oliver is the recipient of the 2022 James M. Jay Diversity in Food Safety Award. Created in 2021, this award recognizes an individual who has made exceptional contributions to enhancing equity, diversity, and inclusion in the field of food safety.

Dr. Oliver is the 150th University Professor of Food Science, Director of the USAID Feed the Future Food Safety Innovation Lab, and a Showalter Faculty Scholar at Purdue University in West Lafayette, Indiana. Dr. Oliver's research focuses on prevalence, persistence, and transmission of *L. monocytogenes* and *Salmonella* in retail food systems, as well as development of practical and feasible control strategies aimed to reduce cross-contamination. As Director of the Food Safety Innovation Lab, she develops and oversees USAID's food safety research portfolio currently implemented in Senegal, Kenya, Bangladesh, Cambodia, Nigeria, and Nepal.

Dr. Oliver is a recipient of the Purdue University Carine Alexander Spirit of the Land-Grant Award; the USDA Food and Agriculture Science Excellence in Teaching Award for New Teachers; Purdue University's Charles B. Murphy Teaching Award, its highest teaching honor; and is an AAAS Leshner Fellow.

Dr. Oliver joined IAFP in 2010 and received the Larry Beuchat Young Researcher Award in 2016 and the Student Travel Scholarship in 2007. She has served on both the *Journal of Food Protection* and *Food Protection Trends* Editorial Boards and on the Affiliate Council. She is a member of several PDGs.

Dr. Oliver completed B.S. degrees in both Molecular Biology and Microbiology from the University of Wyoming and received her Ph.D. in Food Science, with minors in Epidemiology and Microbiology, from Cornell University.

Sponsored by 3M

EWEN C.D. TODD CONTROL OF FOODBORNE ILLNESS AWARD

Darin Detwiler
Los Angeles, California

Dr. Darin Detwiler is the recipient of the 2022 Ewen C.D. Todd Control of Foodborne Illness Award. This award recognizes an individual for dedicated and exceptional contributions to the reduction of risks of foodborne illness. Dr. Detwiler is a Professor of Food Policy and Corporate Social Responsibility at Northeastern University located in Boston, Massachusetts. His students have graduated to leadership positions in industry and in state and federal agencies.

For nearly 30 years, Dr. Detwiler has played a unique role in controlling foodborne illness. After losing his son, Riley, to *E. coli* in 1993, the Secretary of Agriculture invited Dr. Detwiler's collaboration on consumer education. He was twice appointed to the USDA's National Advisory Board on Meat and Poultry Inspection; served as the Senior Policy Coordinator for STOP Foodborne Illness; served on councils for the Conference for Food Protection councils; and supported the U.S. FDA's implementation of the Food Safety Modernization Act (FSMA). As someone who understands, better than most, the true burden of foodborne illness, Dr. Detwiler's research and insights have appeared on television and in print, including his book, *Food Safety: Past, Present, and Predictions*. He sits on numerous advisory and editorial boards and has long consulted on food safety issues with industry in the U.S. and abroad. A vociferous advocate for consumer safety, his experiences and skills make him a bridge between industry and the people it is supposed to protect.

Dr. Detwiler joined IAFP in 2015. He has presented at IAFP Annual Meetings; is a member of several PDGs; has served on IAFP committees; and received *Food Safety Magazine's* Distinguished Service Award at IAFP 2018.

Throughout his career, Dr. Detwiler's goal of inspiring the Herculean effort towards making our food safe is to prevent other parents from living with a chair forever empty at the family table.

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THE FOOD SAFETY LAW FIRM

SANITARIAN AWARD

Charles Giambrone
New Hope, Pennsylvania

The 2022 Sanitarian Award goes to Mr. Charles Giambrone. The Sanitarian Award honors an IAFP Member for dedicated and exceptional service to the profession of the sanitarian serving the public and the food industry. Mr. Giambrone joined Rochester Midland in 2002 and currently serves as Vice President of Technical Services for its Food Safety Division, creating and implementing food safety sanitation programs and training for the food and beverage markets.

After graduating from Rutgers University, Mr. Giambrone was a microbiologist for the New York City Health Department in Food, Dairy and Environmental Microbiology. He then held QA manager positions at Universal Foods and International Multifoods, handling food safety in sanitation programs in bakery, snack foods, and USDA frozen markets.

In the 1980s, with Alcide, Mr. Giambrone studied chlorine dioxide systems for Teat Dips, Medical Devices, Poultry, and Meat Intervention. While at Diversey's International Biocides Lab, he conducted application studies for food and beverage markets. At FMC's Peroxygen Division, he conducted microbiology research for peracetic acid product uses in food and beverage applications.

Dr. Giambrone joined IAFP in 1997 and is a member of several PDGs. He is also a member of three IAFP's Affiliates, including the New Jersey Association for Food Protection, the New York State Association for Food Protection, and the Pennsylvania Association for Food Protection. He has co-authored poster sessions and co-chaired technical talks, roundtables, and mini-symposia for several IAFP Annual Meetings.

Dr. Giambrone is a certified SQF Consultant and FSMA Lead Instructor, and is Train the Trainer HACCP certified as well. He has written 15 articles for *Food Quality & Safety Magazine*. Mr. Giambrone was born and raised in New York City's lower east side and graduated Summa Cum Laude with a B.S. in Biology from Long Island University, and an M.S. in Microbiology from Rutgers University. Married for more than 42 years to his wife, Carol, he has two grown married children.

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ELMER MARTH EDUCATOR AWARD

Lawrence Goodridge
Guelph, Ontario, Canada

Dr. Lawrence "Larry" Goodridge is the recipient of the 2022 IAFP Elmer Marth Educator Award, which recognizes an IAFP Member for dedicated and exceptional contributions to the profession of education. Dr. Goodridge is the Leung Family Professor of Food Safety, and Director of the Canadian Research Institute for Food Safety in the Department of Food Science at the University of Guelph. His primary research interests include the use of genomics to study foodborne and waterborne pathogens with an emphasis on bacterial pathogens, including *Salmonella* spp., *Escherichia coli* O157:H7, and *Listeria monocytogenes*. Specifically, Dr. Goodridge employs genomic approaches to develop strain specific risk assessment approaches, more sensitive diagnostics, and natural control methods to increase the safety in foods. He has authored more than 100 peer-reviewed scientific publications and book chapters, has presented his research at numerous international conferences, and is regularly interviewed by print and radio media on topics of food safety importance.

Dr. Goodridge has been a member of IAFP since 2003, and is actively involved in the Association. He participates in the Fruit and Vegetable Safety and Quality PDG and the Advanced Molecular Analytics PDG. He has convened numerous scientific sessions during Annual Meetings and has served on the Awards Selection Committee, the Nominating Committee, and the Membership Committee as both Chair and Vice Chair.

Dr. Goodridge obtained a B.S. in Microbiology and both an M.S. and Ph.D. in Food Science, all from the University of Guelph. Prior to returning to Guelph, he was a faculty member at the University of Wyoming, Colorado State University, and McGill University. During his academic career, Dr. Goodridge has focused on being a mentor to many students and post-doctoral fellows, and has placed an emphasis on equity, inclusion, and diversity in his research group.

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HAROLD BARNUM INDUSTRY AWARD

Yvonne Chan Masters
Elgin, Illinois

Dr. Yvonne Chan Masters is the recipient of the 2022 Harold Barnum Industry Award which honors her dedication and exceptional service to IAFP, the public, and the food industry. Dr. Masters is the Director of Food Safety and Quality Policy at John B. Sanfilippo & Son, Inc. (JBSS) in Elgin, Illinois. She leads strategic food safety initiatives including food safety culture, validations, environmental monitoring, and food defense. Previously, she worked at Kraft Foods in food safety and quality roles.

As a Food Safety Preventive Controls Alliance (FSPCA) Lead Instructor for Preventive Controls for Human and Animal Food, Dr. Masters teaches food industry workers about food safety. While on the Peanut Tree Nut Processors Association (PTNPA) technical committee, she updated sections of the Industry Handbook for the Safe Processing of Nuts and is a speaker at the PTNPA Technical Forum and webinars.

Dr. Masters joined IAFP in 2004 and received the Student Travel Scholarship in 2006. She is a member of several PDGs and served as the Dairy Safety & Quality PDG Chair from 2017–2019, where she led a subgroup to revise the *Pocket Guide to Dairy Sanitation*. She currently serves as Secretary of the Diversity, Equity and Inclusion (DEI) Council.

Dr. Masters received a B.S. in Microbiology and an M.S. in Food Science from the University of Illinois at Urbana-Champaign and a Ph.D. in Food Science from Cornell University in Ithaca, New York, where she was a recipient of a USDA National Needs Fellowship.

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TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY

Badroonesha Aumjaud
Reduit, Mauritius

Mrs. Badroonesha Aumjaud is a recipient of the 2022 Travel Award. Mrs. Aumjaud is a lecturer in Food Science and Technology at the Faculty of Agriculture at the University of Mauritius in Reduit. Since 1998, she has engaged in teaching students, including a high proportion of young women enrolled in undergraduate/postgraduate food science and technology courses. She has also contributed to scientific committees at the national and international levels. Her main research interests include understanding food handler and consumer food safety behavior for enhanced public health and quality of life; embedding pedagogy in HACCP teaching for better student engagement; experiential learning in real world contexts for youth employability; food safety culture and effectiveness of food safety management systems; and value addition to underutilized local food resources to promote indigenous knowledge, food security and sustainable development.

Throughout her academic career, Mrs. Aumjaud has implemented pedagogical initiatives to promote effectiveness of HACCP teaching, including supervision of student projects on the implementation of food safety management systems in local food industries/hotels; delivery of REHIS (Royal Environmental Health Institute of Scotland) HACCP short courses to undergraduate students; augmenting use of digital tools during the COVID-19 pandemic; sharing of reflections on emergency remote teaching practices in a research paper presented at an international online conference; and organizing online guest lectures delivered by an international professor in food safety management systems to enrich students' learning experience.

Mrs. Aumjaud was the contact person in 2020 and 2021 for a collaborative research project involving the University of Central Lancashire (United Kingdom) and the University of Mauritius, which included a national investigation into consumer food safety behavior. This opportunity has opened doors for future endeavors toward creating a positive food safety culture in Mauritius.

Mrs. Aumjaud holds a B.Sc. (Hons) in Nutrition/Food Science from the University of Surrey and an M.Sc. in Food Technology (Quality Assurance) from the University of Reading in the United Kingdom.

Rine Reuben
Lagos State, Nigeria

Rine Reuben is a recipient of the 2022 Travel Award. Dr. Reuben serves as the zonal secretary of the Nigerian Society for Microbiology, northcentral zone. He is currently working on microbiome assembly in the light of plasmids using the cheese microbiome as a model system.

For more than a decade now, Dr. Reuben has been active in teaching and research in areas bordering food safety, antimicrobial resistance, antibiotic alternatives, microbiome, applied microbiology, and One Health. He has worked extensively on food safety, especially the use of probiotics in the control of foodborne/zoonotic pathogens and sustainable poultry production, emerging infectious diseases including COVID-19, Ebola and Lassa fever. His research has been published in high-impact journals.

Dr. Reuben holds a Ph.D. in Microbiology from Jashore University of Science and Technology through a United States Department of Agriculture (USDA) and Bangladesh Academy of Science (BAS) joint-funded project.

Sponsored by IAFP FOUNDATION

TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY

Neetu Kumra Taneja
Haryana, India

Dr. Neetu Kumra Taneja is a recipient of the 2022 Travel Award. Dr. Taneja is an Assistant Professor (Microbiology) in the Department of Basic and Applied Sciences at the National Institute of Food Technology, Entrepreneurship and Management (NIFTEM), Kundli, an Institute of National Importance under the Ministry of Food Processing Industries, Government of India. She has been actively working in the area of food safety with special focus on antimicrobial resistance, microbial biofilms, and developing novel technologies and tools for controlling and detecting foodborne pathogens. More recently, Dr. Taneja has also been working on exploiting probiotic bacteria in food fortification and overcoming nutrient deficiency in India. She has successfully developed label-free technologies using natural plant-based antimicrobials, and translated those in extending shelf life of refrigerated dairy and non-dairy beverages. With collaborators, she has invented an economical, layered silver-iron oxides nanocomposites for rapid killing of bacterial pathogens and was a granted national patent (IN349010). In another invention, she has serendipitously made an environmentally safe, rapid, selective biostain for Gram-negative bacteria, the first in the world, for which an Indian and U.S. patent application has been filed. This invention has a huge potential in the area of microbial diagnosis and may prove as a game changer for specific detection of pathogens in foods.

Dr. Taneja has played a leadership role in establishing a state-of-art Centre for Food Nano-biotechnology at NIFTEM, conducting cutting-edge research in Food Nano-biotechnology and food safety. She also coordinates a collaborative and unique competitive cadre program on 'Safe Food Business Professionals' around the globe, in collaboration with Nestlé, which aims to create a pool of best experts in food safety through mentoring, training, and certification. She also co-heads the Centre for Food Research Analysis, an accredited commercial food testing laboratory which provides certifications, and training for ensuring safety of our food products.

Dr. Taneja has published several papers in peer-reviewed international journals and has received various externally-funded research projects. She is on the expert panel of several national agencies, i.e., Food Safety and Standards Authority of India (FSSAI) and the Bureau of Indian Standards (BIS) FAD-15. She was recently awarded for remarkable research contribution and serendipitous discovery at the national level for Best Innovation Award 2020 by the Microbiological Society of India.

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TRAVEL AWARD FOR HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES IN NORTH AMERICA

Jessica Danzeisen
Saint Paul, Minnesota

Jessica Danzeisen is a recipient of the 2022 Travel Award. Ms. Danzeisen is a Research Scientist with the Minnesota Department of Agriculture (MDA) Laboratory Services Division in Saint Paul, Minnesota. She earned her B.S. in Zoology and M.S. in Microbiology, both from North Dakota State University in Fargo.

Ms. Danzeisen began her career as a Research Scientist with the University of Minnesota, conducting research on pathogen-host interactions and pathogen virulence mechanisms in livestock production environments. Since joining the MDA in 2016, she has worked in the Microbiology Unit, which provides regulatory testing for dairy, food, meat, and animal feed samples for the State of Minnesota. In this role, her primary focus is evaluating, validating, and implementing emerging technologies and methods for various foodborne pathogens including *Salmonella*, *Listeria*, Shiga-toxin-producing *E. coli*, and *Clostridium perfringens*. In addition, Ms. Danzeisen supports MDA's participation in the Food Emergency Response Network (FERN) through increasing capability and capacity for sample testing for threat agents and routine pathogens in the food supply. She also served as an instructor and training coordinator with the USDA Food Safety Inspection Services (FSIS) FERN Training Center in Minnesota from 2017–2019.

Ms. Danzeisen is grateful for the opportunity to attend IAFP 2022 and is looking forward to expanding her knowledge of current and emerging issues related to food safety.

Jennifer Heller
Nashville, Indiana

Jennifer Heller is a recipient of the 2022 Travel Award. Since 2010, Ms. Heller has served as the primary food inspector for all of Brown County, Indiana-based food establishments and temporary establishments. Currently, there are 127 establishments within the county and seven county-based festivals with multiple vendors.

Ms. Heller is a member of and currently serves as President Elect of the Indiana Environmental Health Association, an IAFP Affiliate, and is a Past Chair of the Southern Chapter of the IEHA. She is also a member of the IEHA Food Protection Committee and serves as Chairperson of the Terrorism and All Hazards Committee for the Association. In addition, Ms. Heller serves as Secretary of the Indiana Environmental Strike Team for the Indiana Department of Health and is a Food Defense Task Force Committee member. She is also a member of the National Environmental Health Association Preparedness Committee.

Ms. Heller teaches the ServSafe Food Manager Certification class for both the Brown County Health Department and for Ivy Tech Community College. On the local level, she serves as Vice President of the Brown County Local Emergency Planning Committee (LEPC) and is Secretary of the local Emergency Management Advisory Council. She is the secretary for the Green Township Fire Rescue Board in Martinsville, Indiana, after serving 17 years as a Firefighter/EMT for the Department.

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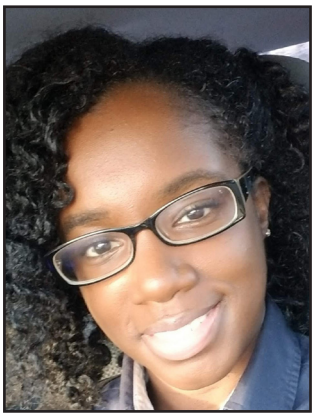
TRAVEL AWARD FOR HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES IN NORTH AMERICA



Erica Jones
Atlanta, Georgia

Erica Jones is a recipient of the 2022 Travel Award. Ms. Jones is an Agriculture Compliance Specialist 11 for the Georgia Department of Agriculture in Atlanta. She has worked in the food industry for more than 14 years.

Ms. Jones is a member of NEHA and holds certifications in Serv Safe and Georgia Structural Pest Control and HACCP certification from Cornell University Online Training. She has attended numerous retail-based, food regulatory and food safety trainings. Her experiences range from inspecting Girl Scout camps to lab testing, microbiology, monitoring CCPs at plants, and regulating more than 600 firms annually.

Ms. Jones holds a Bachelor of Food Science degree from Alabama A&M University. She is a Girl Scout volunteer and a personal trainer in her spare time and looks forward to obtaining her NEHA Registered Environmental Health Specialist and PCQI certifications.

With a passion for learning, training, and educating the public, Ms. Jones has a broad and extensive background ranging from food production, safety, regulation, sanitation, microbiology, research, and development and understands the value in what she does daily, finding joy in making the world a little safer with each encounter. Her personal motto, “All Things Food,” draws awareness to how important and vital food is in every aspect and every way.

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STUDENT TRAVEL SCHOLARSHIP

Jyoti Aryal
Louisiana State University
Baton Rouge, Louisiana

Jyoti Aryal is a Ph.D. candidate in the School of Nutrition and Food Sciences at Louisiana State University, majoring in Food Science and Technology. Ms. Aryal is earning her degree under the supervision of Dr. Achyut Adhikari, with a focus on food safety. She received her bachelor's in Food Technology from Tribhuvan University in Nepal. She joined LSU for her master's in Food Science and Technology and has since been working on developing new food safety resources and educating the growers, processors, and consumers on safer practices while handling the food from farm to fork.

Ms. Aryal's master's research focused on validating and verifying the efficacy of antimicrobials used as per practices followed in produce packaging operations and determining the minimum exposure time of sanitizer solution with a higher level of efficacy. In addition, she studied the behavior of bacterial growth in produce matrices during storage to help small-scale growers develop strategies to remove the attached bacterial cells from fresh produce. Ms. Aryal is currently working on developing more cost-effective techniques to mitigate the risk of cross-contamination in fresh produce. She has also started to work on stress adaptation of microbial pathogens and their survival and virulence in various environmental conditions including post-harvest processing. Besides research, she is involved in extension work alongside Dr. Adhikari to educate the growers, processors, and consumers through various food safety trainings and LSU AgCenter's social media handles.

Ms. Aryal is deeply honored to receive the 2022 Student Travel Scholarship and acknowledges that this is a wonderful opportunity for the expansion of her personal and professional development. She wishes to broaden her professional horizon through this conference and is looking forward to receiving feedback on her research from the leading experts in the field.

Patrice Bonny
University of Yaounde I
Yaounde, Cameroon

Patrice Bonny is a Ph.D. candidate in Food Microbiology at the University of Yaounde I, Cameroon, under the direction of Professor Jean Justin Essia Ngang with the University of Yaounde I and Dr. Soizick F. Le Guyader with the French Research Institute for the Exploitation of the Sea (Ifremer, Nantes).

Mr. Bonny's current research focuses on the diversity of RNA viruses contaminating Sanaga clams. During his research, he completed several internships at the Ifremer Laboratory and was trained in the quantification of foodborne viruses in shellfish. He equally participated in the development of a metagenomic approach to study the diversity of viral contaminants in shellfish. This approach allowed the detection of a broad variety of human and potential zoonotic viruses in Sanaga clams that may represent a danger to consumers.

Mr. Bonny's work also contributed to demonstrate that clams, by their water filtering activity, may contribute to the description of viruses and can be used as sentinel of the viral diversity. His work was valorized in two papers. As a pioneer in the detection of viruses in food and viral metagenomics in his country, his expertise is currently used to develop food virology in his university. He also wishes to develop a national and sub-regional network for the surveillance of known and emerging foodborne viruses.

Mr. Bonny's master's research focused on the influence of traditional cooking and smoking on the microbiological quality of the wild Sanaga River edible clams. Since joining IAFP in 2020, Mr. Bonny has been involved in numerous PDGs. He took part in IAFP's European Symposium on Food Safety, held in Nantes in 2019, and presented a virtual poster during IAFP 2020.

Mr. Bonny is extremely honored to receive the 2022 Student Travel Scholarship and hopes this meeting will allow him to obtain cutting-edge knowledge about food safety research and expand his professional network.

IAFP FOUNDATION

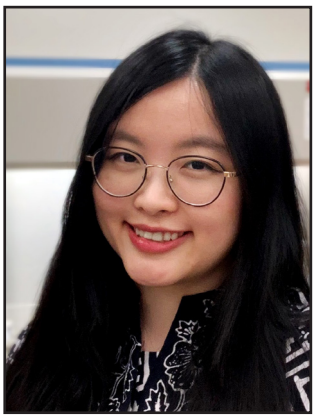
STUDENT TRAVEL SCHOLARSHIP

Carmen Lucía Cano Roca
University of Nebraska – Lincoln
Lincoln, Nebraska

Carmen Cano Roca is a Ph.D. candidate in the Department of Food Science and Technology at the University of Nebraska–Lincoln in Lincoln, under the direction of Dr. Byron Chaves. Ms. Cano's current research focuses on understanding and controlling *Salmonella* spp. throughout the poultry processing chain by using oxidizing antimicrobials, including ozonated water and peroxyacetic acid. Additionally, she has led projects focused on *Salmonella* population dynamics and validation of household appliances for consumer use. She hopes her research will decrease the burden of *Salmonella* for producers and consumers.

Born and raised in Guatemala, Ms. Cano earned her B.S. in Food Engineering at Universidad del Valle de Guatemala in Guatemala City. She enrolled at the University of Nebraska–Lincoln in 2012 for her M.S. in Food Science and Technology under the supervision of Dr. Jayne Stratton. Her master's thesis focused on antimicrobial resistance in potential probiotic strains. After graduation, Ms. Cano worked for three years in food companies in Guatemala, applying her product development and food safety skills. Her love of research and microbiology encouraged her to return to Nebraska for her Ph.D. Throughout her program, she has worked in extension and science communication activities to advance food safety in the community. She hopes to continue that work in industry after graduation. Additionally, Ms. Cano is proud to serve on the board of IAFP's Student PDG during 2021–2022.

Ms. Cano is extremely honored to be awarded one of the 2022 Student Travel Scholarships, which will allow her to attend the Annual Meeting and expand her network with academic, industry, and government personnel, while sharing the results of her research.



Grace Dewi
University of Minnesota
Saint Paul, Minnesota

Grace Dewi is a Ph.D. candidate in the Department of Animal Science with a minor in Food Science at the University of Minnesota (UMN) in Saint Paul, under the direction of Dr. Anup Kollanoor Johny.

Ms. Dewi also earned her M.S. from UMN with research investigating the potential of lemongrass essential oil against multidrug-resistant *Salmonella* in broilers. Ms. Dewi's doctoral research focuses on pre- and post-harvest mitigation strategies in turkey production, specifically exploring turkey-derived probiotics and plant-derived extracts. Currently, she utilizes metabolomic approaches to further study these interventions both *in vivo* and in meat. She strives to improve food safety through developing innovative interventions and finding ways to maximize their benefits to strengthen current control measures.

In conjunction with her dissertation research, Ms. Dewi works alongside her advisor in teaching applied microbiology and poultry courses. She also collaborates in the USDA Sustainable Agricultural Systems project, conducting focus groups with poultry producers and consumers in Minnesota. Interfacing with a variety of stakeholders enlightened her to the diverse perspectives on interventions used in food production and the significance of their cooperation in ensuring the safety of foods.

Ms. Dewi is honored to receive the IAFP Student Travel Scholarship and grateful for the opportunity to partake in IAFP 2022. She looks forward to sharing her research, expanding her professional network, connecting with colleagues, and learning the cutting-edge research conducted by experts worldwide.

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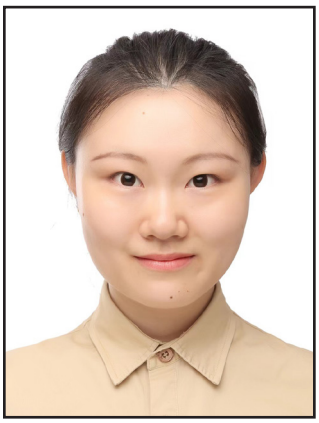
STUDENT TRAVEL SCHOLARSHIP

Jennifer M. Dorick
University of Georgia
Athens, Georgia

Jennifer Dorick is a Ph.D. student in the Department of Food Science and Technology at the University of Georgia in Athens, under the direction of Dr. Laurel Dunn and Dr. Govindaraj Dev Kumar. Ms. Dorick earned her B.S. in Food Science and Technology at Virginia Tech, where she discovered her passion for food safety while interning in Food Safety and Quality Assurance at Tyson Foods, Inc. She continued her education by earning her M.S. in Poultry Science with a focus in food science from Auburn University under the direction of Dr. Tung-Shi Huang. Her research focused on alternative, sustainable agricultural practices, including a study on generic *Escherichia coli* content in aquaponic water used for produce irrigation.

Ms. Dorick secured funding through the Georgia Sea Grant to pursue her Ph.D. with continued research in aquaponics. She is completing a two-year microbial examination of the potential pathogens, including *Listeria monocytogenes*, Shiga toxin-producing *E. coli*, *Salmonella enterica*, *Aeromonas hydrophila*, and *Pseudomonas aeruginosa*, and their frequently contaminated regions in a commercial aquaponics system. From the initial evaluation, the emerging pathogen, *A. hydrophila*, proliferated throughout the system. Therefore, a subsequent study is being performed to determine the ability of *A. hydrophila,* isolated from the aquaponics system, to form biofilms in and on aquaponic water and substrates. This research will provide a better understanding of potential food safety risks with produce grown in aquaponics and controlled environment agriculture. In addition, Ms. Dorick has spent time in the community as a Produce Safety Alliance Trainer educating produce farmers on food safety practices.

Ms. Dorick is honored to receive the Student Travel Scholarship to participate in IAFP 2022. This travel scholarship will allow her to further her future career through building and fostering relationships, presenting her current research, and engaging with food safety peers and professionals.



Mairui Gao
University of Connecticut
Storrs, Connecticut

Mairui Gao is a Ph.D. student in Dr. Mary Anne Amalaradjou's lab at the University of Connecticut in Storrs. Ms. Gao obtained her B.S. in food science from Nanjing Agricultural University with distinction in 2016 and M.S. from Sichuan University in 2019.

Ms. Gao's research focus is on food safety and poultry science. Specifically, she used a multi-hurdle approach to control *Salmonella* and *E. coli* O157:H7 on alfalfa seeds and sprouts. She also applied lactic acid bacteria as protective cultures to control *Listeria monocytogenes* on apples under simulated storage conditions. In addition, she conducted research to understand how the food matrix can influence the survival of pathogens through gastrointestinal digestion using an in-vitro model. Ms. Gao is also interested in the virulence of pathogens and the effect of probiotics on attenuating virulence using *C. elegans* model. Ultimately, these research projects can provide effective strategies to control pathogens and a better understanding of the pathogen behavior after exposure to food. Moreover, she also applies early supplementation of probiotics to improve chick quality and investigates the changes in the microbiome.

In addition to research, Ms. Gao is passionate about food safety education involving food handlers and the general public. She believes that many foodborne illnesses can be prevented through good practice, which can be achieved through education.

Ms. Gao is honored to be awarded the 2022 Student Travel Scholarship. She hopes this meeting can strengthen her knowledge of emerging food safety issues and the innovative control strategies, and build her professional network with experts and students from different fields.

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STUDENT TRAVEL SCHOLARSHIP

Mrinalini Ghoshal
University of Massachusetts, Amherst
Amherst, Massachusetts

Mrinalini Ghoshal is a Ph.D. candidate at the University of Massachusetts, Amherst, working under the guidance of Dr. Lynne McLandsborough. Ms. Ghoshal obtained her B.S. and M.S. in microbiology in India where she gained a passion for food microbiology and foodborne diseases. Her current research is focused on the development of novel delivery systems for antimicrobial compounds to control contamination of foodborne pathogens, such as *Salmonella* in low-moisture food-processing environments. The goal of this research is to reduce reliance on the use of water for sanitation since water-based sanitation is not suitable for low-moisture foods such as peanut butter, peanuts, and other nuts. The novel antimicrobial formulations she is working on have the potential to be cost-effective and serve as a robust replacement to the sanitation methods currently in use.

In addition, Ms. Ghoshal is exploring the genetic adaptations in *Salmonella* that enable it to survive long-term exposure to different antimicrobial compounds. This work will help to expand one's understanding of the resistance mechanisms that enable foodborne pathogens to survive in stressful environments commonly found in food-processing industries. In the future, she hopes to continue working on the development of economical and effective techniques and formulations for improving sanitation and food safety, especially in developing countries.

Ms. Ghoshal is honored to receive the Student Travel Scholarship to attend IAFP 2022. She believes this meeting will be a great opportunity for her to network with other researchers and learn about new ideas and techniques. She looks forward to sharing her research with other food safety enthusiasts.

Madison Goforth
University of Arizona
Tucson, Arizona

Madison Goforth is an undergraduate student in the Department of Animal and Comparative Biomedical Sciences at the University of Arizona in Tucson. Her B.S. is in Microbiology and Nutrition and Food Systems with an emphasis in food safety. As an undergraduate student, Ms. Goforth has been in several labs under the guidance of multiple principal investigators. Her experiences in food safety research, metagenomics, and wastewater filtration and extraction led her to pursue a master's in microbiology under the direction of her advisor, Dr. Kerry Cooper.

Ms. Goforth's current research focuses on the microbiome of melons grown in the United States. Several comparisons between the melons taken at different points of the food processing systems are being analyzed as well as between the variety of melons grown in one region and between different regions. Over the past several years, she has developed skills in microbiome analysis such as PCR detection, quantification of viable DNA, and analysis through software like QIIME2 and R. With her current research, Ms. Goforth hopes to find connections of protagonistic and antagonistic bacteria against foodborne pathogens as well as identify variations in bacterial diversity of melons and regions. This could potentially help industries prepare HACCP protocols based on the regionality of the melons and/or the melon variety.

While developing her research skills as an undergraduate, Ms. Goforth stays active in the food safety community by attending the Food Safety Consortium through the University of Arizona and joining the consortium's general meetings. She is grateful and honored to receive one of this year's Student Travel Scholarships to take part in IAFP 2022. During her attendance, she hopes to gain knowledge of local and global food safety systems, network with established researchers for future collaboration, and present research and personal experiences.

IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP

Olivia C. Haley
Kansas State University
Olathe, Kansas

Olivia C. Haley is a Ph.D. candidate in Dr. Manreet Bhullar's lab at Kansas State University located in Olathe. Ms. Haley is originally from South Carolina, where she obtained her bachelor's in Biological Sciences from the University of South Carolina. She also holds a master's in Plant Sciences from McGill University. Before coming to K-State, she worked as a Laboratory Lead for a food microbiology testing laboratory, where she gained critical insight into food safety needs within the produce industry.

Ms. Haley joined the Bhullar Food Safety Lab in the fall of 2020 and currently investigates the use of ultraviolet (UV) light to kill human pathogens in agricultural water and on fresh produce surfaces. Accordingly, she has led projects to evaluate the antimicrobial efficacy of UV technologies against fecal indicators in agricultural surface waters with the goal of developing an algorithm for fresh produce growers to estimate the costs and efficacy of using UV light in their produce operations. She is also working to develop an effective, affordable, conveyor belt UV-disinfection system for small-scale fresh produce growers to increase the microbial safety of their fresh produce.

Ms. Haley is very passionate about food safety and believes that the access to safe, nutritious, and affordable food is a basic human right. At K-State, she is a Food Security Scholar, and has been the recipient of multiple awards and featured in various media outlets. Her long-term goal is to become a resource for food safety knowledge and bridge the gap between the scientific community, consumers, and fresh produce growers.

Ms. Haley is incredibly appreciative of the support from the IAFP community and looks forward to this opportunity at IAFP 2022 to network with food science professionals and learn more about innovative scientific communication methods.

Rosa Heydenreich
ETH Zurich
Zurich, Switzerland

Rosa Heydenreich is a doctoral candidate in the Laboratory of Sustainable Food Processing at ETH Zurich in Switzerland. Born in Germany, Ms. Heydenreich received her B.Sc. in Chemistry at the University of Vienna and her M.Sc. at the Technical University of Vienna.

Ms. Heydenreich gained experience in different chemical disciplines before she focused on microbiology. For her master's thesis, she worked on the optimization of enzyme secretion in the filamentous fungus *Trichoderma reesei* in the research group for Synthetic Biology and Molecular Biotechnology of Professor Robert Mach. Her passion for microorganisms brought her to the research area of food safety. Ms. Heydenreich conducts research on resistance properties of bacterial spores, so-called superdormant spores, that do not respond to high pressure as germination trigger and impede a mild spore decontamination approach. Her research will contribute to the development of a gentle high-pressure based bacterial spore control strategy for safe food with high nutritional value, great taste, and a lower environmental food print.

Ms. Heydenreich is honored to receive the 2022 Student Travel Scholarship and be able to exchange information with internationally recognized food safety scientists at IAFP 2022.

IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP

Minji Hur
University of Georgia
Athens, Georgia

Minji Hur is a Ph.D. candidate in the Department of Food Science and Technology and Center for Food Safety at the University of Georgia (UGA) in Athens, under the direction of Dr. Francisco Diez-Gonzalez.

Ms. Hur is currently working on determining the survival of *Listeria monocytogenes* on avocado skin during storage, its transference to pulp by cutting, and post-cutting growth on pulp during refrigerated storage. She also plans to explore the use of a novel antimicrobial technology with blue light for foodborne pathogen control. Upon graduation, she would like to explore career opportunities in the food industry.

During her senior undergraduate year, Ms. Hur had the opportunity to work for Drs. Dumitru Macarisin and Yi Chen at the FDA in Maryland, where she developed a deep interest in food safety and microbiology. She earned her B.S. after working in Dr. Jong-Hyun Park's lab in Food Science and Biotechnology at Gachon University in South Korea. In 2020, she received her M.S. in Food Science from UGA under the direction of Dr. Jinru Chen, investigating the microbial quality of fresh blueberries harvested by different harvesting methods.

Ms. Hur is humbly honored to be a recipient of the 2022 Student Travel Scholarship. She looks forward to meeting professionals in the industry, government, and academic fields of food safety as well as staying current with cutting-edge scientific findings.

Mwarome Jumbale
University of Nairobi
Nairobi, Kenya

Mwarome Jumbale is a master's student in Food Safety and Quality in the Department of Food Science, Nutrition and Technology at the University of Nairobi in Kenya, where he also received his undergraduate degree in food nutrition and dietetics. Mr. Jumbale's current research is on the optimization of processing parameters in the production of mango flakes under the direction of his supervisors, Professor Michael Wandayi Okoth, Dr. George Ooko Abong, and Professor Jane Lukachi Ambuko.

Mr. Jumbale's research is focused on strengthening the mango value chain by identifying optimized processing conditions and technologies for mango flakes production. The aim of his work is to enhance economic returns from mango farming and reduce postharvest losses of the seasonally produced fruit.

Aside from his academic engagements, Mr. Jumbale has been involved in capacity building at both the institutional and the community levels. He participated in capacity building workshops for mango farmers in Kenya during 2020. He also collaborated with the Rural Outreach Africa (ROA) on a program aiming at strengthening community food systems among coffee farmers by utilizing kitchen gardens. His nutrition background has allowed him to work in nutrition-specific programs covering both clinical and community outreach set-ups.

Mr. Jumbale has a passion in promoting community-based food systems, especially for the economically vulnerable through the nurturing of innovative, sustainable, and affordable technologies. He is highly honored to receive the 2022 Student Travel Scholarship and is hoping that this award will bring him closer to the IAFP family to help him build a network with diverse professionals in the food protection annex.

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STUDENT TRAVEL SCHOLARSHIP

Amalia Ghaisani Komarudin
University of Tokyo
Tokyo, Japan

Amalia Ghaisani Komarudin is a Ph.D. student in the Department of Global Agricultural Sciences of the Graduate School of Agricultural and Life Sciences at the University of Tokyo in Japan. A native of Indonesia, Ms. Komarudin is currently sponsored by the Indonesian Endowment Fund for Education, Republic of Indonesia. Ms. Komarudin is working on non-thermal atmospheric plasma (NTAP), collaborating with the National Food Research Institute (NFRI) in Tsukuba, Japan. Her group is exploring the potential use of the emerging technology as a new sanitizing agent for fresh produce in extending the shelf life.

Ms. Komarudin began to find her passion in food microbiology and food safety while pursuing her undergraduate studies in microbiology at the Institut Teknologi Bandung in Indonesia. She holds an M.Sc. in Food Safety, Hygiene, and Management from the University of Birmingham in the UK. After her master's graduation, she worked for Mondelez International in Indonesia in the Research, Development, and Quality division. She was responsible for evaluating the shelf life of newly-developed products, mainly biscuits and crackers.

Describing herself as a lifelong learner, Ms. Komarudin believes in the saying, "The best way to learn is to teach." She has been affiliated since 2018 with the School of Life Sciences and Technology at the Institut Teknologi Bandung as a junior lecturer and belongs to the microbial biotechnology research group.

Ms. Komarudin is extremely honored to receive the IAFP Student Travel Scholarship. She is excited to learn from the exceptional keynote speakers, first-class food safety experts, and inspiring panel discussions under one roof to expand her networks and improve her knowledge and skills in her field.

Tengfei Li
University of Nebraska – Lincoln
Lincoln, Nebraska

Tengfei Li is a Ph.D. candidate in the Department of Food Science and Technology at the University of Nebraska – Lincoln in Lincoln under the supervision of Professor Joseph Baumert. Ms. Li earned her M.S. in Nutrition and Food Science at Florida State University. Her current research project is to screen and select robust cross-species analytical peptide targets in commonly consumed fish species, which could then be utilized to raise polyclonal antibodies. These antibodies will be applied to develop a reliable and sensitive ELISA method for the detection of fish residues across different fish species. Currently, available commercial fish ELISAs are limited in reliably detecting fish residue across multiple species. The goal of this project is to aid in the improvement of fish protein detection across commercially important fish species. Ms. Li's research seeks to improve food allergen labeling and management and ensure the food safety of fish-allergic consumers. She hopes to become a research scientist in a research-based environment to contribute to the field of food allergens using the skills and experience she has gained over the years.

Ms. Li is pleased to receive this year's Student Travel Scholarship and be honored at IAFP 2022. Receiving this award recognizes her research and her academic performance, giving her more encouragement and motivation to continue learning and exploring in her research field and contributing to global health and food safety.

IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP

Tlaleo Azael Marole
University of Pretoria
Pretoria, South Africa

Tlaleo Azael Marole is a Ph.D. food science candidate in the Department of Consumer and Food Sciences at the University of Pretoria in Pretoria, South Africa, under the supervision of Professor Elna Buys and co-supervisor Dr. Thulani Sibanda. Mr. Marole obtained his B.Sc. in Biotechnology at the National University of Lesotho and his M.Sc. in Food Science, Safety and Health with distinction at Heriot Watt University in Scotland. He is a trained food safety auditor with more than six years of experience working in the dairy industry, including various dairy companies in South Africa where he was responsible for the implementation of Food Safety Management Systems (e.g., Food Safety System Certification – FSSC 22000, Food Safety Assessment – FSA and HACCP) and quality control.

Mr. Marole's current research focuses on enhancing the survival of probiotic bacteria and production of bioactive metabolites in a multi-strain synbiotic yoghurt during storage. Currently, survival of probiotics during storage poses a serious challenge in the food industry as their viability decline below minimum therapeutic level. Mr. Marole believes his work will contribute immensely to food safety and quality as probiotics are associated with various benefits, such as antimicrobial activity against pathogenic microorganisms, colonization resistance, and stabilizing disturbed gut microbiota which are important during foodborne infections.

After graduation, Mr. Marole aims to become an independent food science and safety consultant and help his home country of Lesotho establish its own food safety regulations. He is honored and excited to receive the IAFP Student Travel Scholarship to attend this year's Annual Meeting. He anticipates gaining great knowledge from the best in the food safety profession which he will use in his current studies and career aspirations, and to increase his networking to an international level during the conference.

David Mugabo
University of Rwanda
Kigali, Rwanda

David Mugabo is an undergraduate student in the Department of Food Science and Technology in the College of Agriculture, Animal Sciences, and Veterinary Medicine at the University of Rwanda in Kigali. Mr. Mugabo is currently working on an initiative to share his food safety knowledge (i.e., food safety hazards, hygienic food processing, and food safety management systems) with small local food processing businesses.

Mr. Mugabo joined the university in 2018, and started engaging in community outreach programs to educate the local community about food safety and the proper food safety practices at retail and home levels. Through these outreaches, he grew increasingly interested in food safety after realizing its importance and impact on good human health and well-being, and overall community development. His career aspirations are to build and strengthen food quality and safety management systems in developing and underdeveloped countries.

Mr. Mugabo is honored to receive the Student Travel Scholarship to attend IAFP 2022. He intends to interact and learn from fellow students and food safety experts from all over the world, which will help him build his career in food safety. He is eager to learn about new research, innovations, and technology in the food safety sector.

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STUDENT TRAVEL SCHOLARSHIP

Jennifer Mydosh
University of Arizona
Tucson, Arizona

Jennifer Mydosh is a second year Ph.D. student in Microbiology in Dr. Kerry Cooper's research laboratory in the School of Animal and Comparative Biomedical Sciences at the University of Arizona in Tucson.

Ms. Mydosh is currently investigating the food borne pathogen *Campylobacter jejuni*, which is the leading cause of bacterial gastroenteritis in the world. Her research aims to begin to address the different clinical manifestations observed with various *C. jejuni* strains by investigating the role of one of its two component regulatory systems, RacRS. The hope is that this research will contribute to improving the epidemiology and potentially the development of therapeutics for *C. jejuni* infections, while ultimately expanding our knowledge of this important foodborne pathogen. In addition to her dissertation project, Ms. Mydosh is active in food safety education and has contributed to recruiting participants for a study on post-infectious irritable bowel syndrome associated with *C. jejuni* infections.

Ms. Mydosh earned her B.S. in Medical Laboratory Science at the University of New Hampshire, where she found a love for research on bacterial pathogens while working in numerous labs on campus and during an NSF REU summer research internship. Her NSF REU research in Dr. George McManus's microzooplankton lab resulted in her first middle author publication. In Dr. Anissa Poleatewich's plant pathology lab, she received a Week's Fellowship to investigate *Bacillus* species as potential biological control agents for plant pathogens. Ms. Mydosh also received a UNH undergraduate research fellowship to continue her research in Dr. Cheryl Andam's microbial genetics and evolution lab, resulting in two recently published middle author publications.

Ms. Mydosh is extremely honored to receive the 2022 Student Travel Scholarship and is looking forward to expanding her professional network, sharing her research, and improving her knowledge of food safety.

Jasmine C. Smalls
University of Maryland
Eastern Shore
Princess Anne, Maryland

Jasmine Smalls is a Ph.D. candidate working in the Food Microbiology Safety Laboratory at the University of Maryland Eastern Shore in Princess Anne under the supervision of Dr. Salina Parveen. Ms. Smalls' current research consists of several objectives. Her primary focus aims to investigate the spatial, seasonal, and inter-annual variations in the occurrences of *Vibrio parahaemolyticus* and *V. vulnificus* in blue crabs (*Callinectes sapidus*) and seawater in correlation with biotic and abiotic factors in the Maryland Coastal Bays.

Ms. Smalls was able to fulfill her interest in seafood safety when she was provided an opportunity to intern at an aquaculture research facility following her freshman year at Cheyney University of Pennsylvania under the guidance of Dr. Steven Hughes. There, she assisted in maintaining rainbow trout (*Oncorhynchus mykiss*) and Nile tilapia (*Oreochromis niloticus*) populations. Her passion for seafood safety further deepened while pursuing her M.S. at Delaware State University under the advisement of Dr. Dennis McIntosh. Her research consisted of investigating the effects of novel probiotics on the growth and survival in post-larval pacific white shrimp cultures (*Litopenaeus vannamei*) to determine their potential use to maximize shrimp yield for mass production.

Ms. Smalls is very excited and beyond grateful to be a recipient of the 2022 Student Travel Award. She aspires to become an interdisciplinary food scientist and plans to network and build connections with other fellow scientists at this year's meeting in hopes of collaborating in future food safety research studies.

IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP

Anand Soorneedi
University of Massachusetts, Amherst
Amherst, Massachusetts

Anand Soorneedi is a Ph.D. candidate in the Department of Food Science at the University of Massachusetts in Amherst, under the supervision of Dr. Matthew Moore. After earning his bachelor's degree in Biochemistry from India, Mr. Soorneedi obtained his master's in Molecular Biology and Biochemistry from Wesleyan University. His master's research focused on yeast genetics, identifying significance of co-regulated genes in eukaryotes and its implications. His current research focuses on the development of methods to concentrate food and environmental viruses from food samples prior to detection, as well as investigating new ways to inactivate viruses that pose a threat to public health. He is also working on a project to explore the feasibility of using *C. elegans* as an infectivity model for noroviruses. Mr. Soorneedi has also taken the lead on a project in collaboration with a lab at Harvard University on engineered water nanostructures, a disinfectant platform that allows for effective inactivation of microorganisms on food and environmental surfaces.

Mr. Soorneedi has received multiple fellowships, including from the Department of Food Science and a teaching fellowship from the College of Natural Sciences at UMass Amherst. He enjoys teaching science and would like to pursue a career in academia following graduation. He is confident that his experience training and teaching undergraduates and fellow graduates in the lab will come in handy for pursuing his dream of becoming an academic.

Mr. Soorneedi joined IAFP in 2019 and has been actively involved in several PDGs. He is co-hosting a symposium at IAFP 2022 titled, "Developments in sample preparation: Implications in pathogen detection when difficult matrices are involved," and is very much looking forward to this year's conference. He believes IAFP has provided him with an excellent platform to showcase his research and to network with fellow scientists and industry leaders. He is very honored to have received this year's Student Travel Scholarship and would like to thank everyone at IAFP for all the opportunities and excellent hospitality.

Saki Tanaka
Hokkaido University
Sapporo, Japan

Saki Tanaka completed her bachelor's degree in March 2022 in the Department of Agriculture at Hokkaido University in Sapporo, Japan. Ms. Tanaka is continuing her studies at the Food Process Engineering Laboratory under the supervision of Dr. Shigenobu Koseki at Hokkaido University and will enter the master's biotechnology program in September 2022 at Wageningen University in The Netherlands. Having experienced the diversity of food cultures and the beauty of communication through food, she was inspired to make people worldwide happy through her research in food science.

During her undergraduate studies, Ms. Tanaka researched food quality control techniques using TTI (time-temperature indicator) based on the Maillard reaction and validated that it could visualize frozen foods' temperature history and quality, which is hard to control precisely. The TTI can be used as a new method for quality control and reassuring consumers, not relying on shelf-life labeling assuming isothermal storage. Ms.Tanaka will present a poster at IAFP 2022 on the results of this research. Her current research focuses on the behavior of microorganisms in food tolerant to dryness and viable but non-culturable bacteria. She is also interested in studying plant-based foods such as alternative meat in graduate school.

Ms. Tanaka is very honored to receive the Student Travel Scholarship and excited to interact with experts from diverse backgrounds and broaden her insight at IAFP 2022 – her first international conference.

IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP

Kaidi Wang
McGill University
Montreal, Quebec, Canada

Kaidi Wang is a Ph.D. candidate in Food Science at McGill University in Montreal, Canada, under the supervision of Dr. Xiaonan Lu. Ms. Wang completed her B.Sc. at Zhejiang University in China and her M.Sc. in Food Science at the University of British Columbia in Canada. Her M.Sc. project focused mainly on the rapid detection of foodborne pathogens using Raman spectroscopy. Upon graduation, she continued her doctoral studies in the same research group, transferring to McGill University in 2020 due to lab relocation.

Ms. Wang is currently working on a thesis project to investigate the formation and resuscitation of viable but non-culturable (VBNC) *Campylobacter jejuni* in the food chain. The presence of VBNC *C. jejuni* in the food processing environment and food products poses a significant risk to public health due to their ability to resuscitate and demonstrate pathogenic potential. Novel and diverse interdisciplinary techniques, such as optical tweezer, microfluidic "lab-on a-chip," machine learning, and metabolomics are involved in this project. This work has the potential to provide rapid and reliable methods to detect and characterize VBNC bacteria and help reduce *Campylobacter* contamination in agri-foods.

Ms. Wang has actively participated in IAFP Annual Meetings several times to present her research to diverse audiences. She is honored to receive this year's Student Travel Scholarship and is looking forward to gaining cutting-edge knowledge about food safety and networking with food science professionals from around the world.

Zirui Ray Xiong
Cornell University
Ithaca, New York

Zirui Ray Xiong is a Ph.D. candidate in the Department of Food Science at Cornell University in Ithaca, New York, under the direction of Dr. Randy Worobo. Mr. Xiong earned his B.S. in Biotechnology from the University of Science and Technology of China and his M.P.S. and M.S. in Food Science at Cornell University.

Mr. Xiong is currently working on a metagenomic project to evaluate the microbial profile in raw honey and the potential probiotic microorganisms that are present in honey. During his graduate studies, he worked on several research projects related to food safety and food quality. His previous research on the safety evaluation of back-sweetened alcoholic beverages established safe holding time to ensure that the finished products are free of foodborne pathogens, including *E. coli*, *Salmonella enterica*, and *Listeria monocytogenes*. In another study, Mr. Xiong combined whole-genome sequence analysis with traditional chemical characterization method to identify antifungal secondary metabolite, a potential natural fungicide for the food industry, secreted by *Bacillus* sp. isolated from raw honey. After graduation, he plans to work in the food industry to continue his contribution to food safety research and help ensure people have access to safe and high-quality food.

Mr. Xiong feels extremely honored to receive the 2022 Student Travel Scholarship. He looks forward to gaining food safety knowledge from food scientists in industry, government, and academia, building his professional network, and advancing his career in food safety. He is also excited about contributing to the conference and presenting his research projects.

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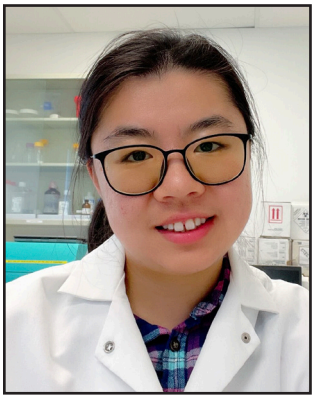
STUDENT TRAVEL SCHOLARSHIP



Lang Yao
Carleton University
Ottawa, Ontario, Canada

Lang Yao is a Ph.D. candidate in the Department of Biology at Carleton University in Ottawa, Ontario, Canada, under the direction of Dr. Alex Wong. Ms. Yao is conducting research projects at the Canadian Food Inspection Agency (Ottawa Laboratory Carling), co-supervised by Drs. Burton Blais and Catherine Carrillo, focusing on method development for the detection and isolation of bacterial pathogens from foods using their genomically informed biological characteristics.

Ms. Yao is currently working on the application of genomically predicted antimicrobial resistant (AMR) traits of bacterial pathogens prioritized by Canadian policy makers. Her primary dissertation project is aimed at developing custom enrichment methods for *Shigella* recovery to support foodborne shigellosis outbreak investigations, by exploiting unique AMR markers of the outbreak-implicated *Shigella* strain, and using the corresponding antibiotic(s) as the selective factor(s) during the cultural enrichment process. This approach has significantly increased the chance of isolating *Shigella* colonies from a model food commodity and will become an important tool for determining contaminated food sources and taking rapid actions on controlling the spread of contaminated food in future shigellosis outbreaks.

Ms. Yao is also interested in studying the biological characteristics of non-target bacteria from the food background and their impacts on the performance of food pathogen detection methods to not only explain why certain pathogens like *Shigella* are hard to recover from food, but also provide valuable ideas and considerations in further method developments.

Ms. Yao is honored to receive the IAFP Student Travel Scholarship. She looks forward to not only presenting the progress she has made on the development of *Shigella* recovery method, but also being inspired by novel ideas presented by other young scientists from all over the world, working together on how to keep our food safe in more efficient, reliable, and cost-effective ways.

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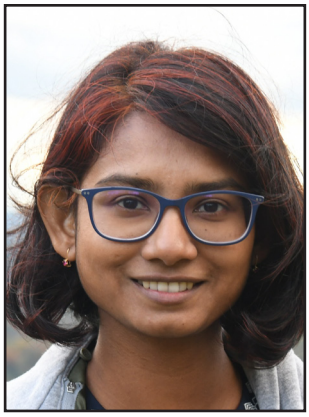
PEANUT PROUD STUDENT SCHOLARSHIP

The Peanut Proud Student Scholarship Award provides a $2,000 academic scholarship and travel funding for a U.S. student in the field of food microbiology – specifically in the area of peanuts and peanut butter food safety – to attend the Annual Meeting. Peanut Proud is a nonprofit industry organization based in Georgia.



Arpita Aditya
University of Maryland – College Park
College Park, Maryland

Arpita Aditya is a Ph.D. candidate in the Department of Animal and Avian Sciences at the University of Maryland – College Park in College Park. Miss Aditya graduated with a B.S. and M.S. in Microbiology from the University of Dhaka in Bangladesh. During her undergraduate studies, she developed a great interest in food microbiology. Wanting to make a difference, she chose to pursue higher education in the field of food safety. Because safe food is still in short supply in many regions of the world, she obtained the appropriate academic experience with the mentorship of Dr. Debabrata Biswas at UMD.

Miss Aditya's research is centered on the application of natural products as a preventative strategy against foodborne bacterial enteric infections through modulating gut flora. Utilizing the power of natural antimicrobial components, her aim is to counteract several human pathogens such as *E. coli, Salmonella, Campylobacter*, etc. at different steps of the food supply chain, specifically at their source or reservoir. Miss Aditya has found that the prebiotic-like components present in our daily food items, such as peanuts and berry fruits, stimulate the growth of probiotic bacteria while suppressing the enteric pathogens. Additionally, she has found the efficacy of peanuts to control the growth of enterohemorrhagic *Escherichia coli* (EHEC) in combination with a probiotic bacteria, *Lactobacillus casei,* even in a simulated rumen system. Her findings are the groundwork to design strategies that will minimize the prevalence of pathogenic *E. coli* at its source. To widen her scope of understanding, she is also studying the antagonistic mechanism of interaction between EHEC, and postbiotics collected under diverse conditions.

Ms. Aditya's research findings are published in reputed journals including *Frontiers in Microbiology, Journal of Food Protection, Journal of Berry Research,* and *Scientific Reports*. She is a constant contributor outside of her own work and her expertise is greatly sought. Dozens of her peers solicit her technical acumen as a trusted and insightful reviewer. Her expertise in the field of food safety has contributed to her being invited as a guest lecturer and speaker.

Before coming to the U.S., Miss Aditya was the lecturer of Mycology at the Noakhali Science and Technology University in Bangladesh, teaching undergraduate students.

Miss Aditya is grateful to receive the 2022 Peanut Proud Student Scholarship Award based on her accomplishments in food safety research. She will graduate in the summer of 2022 and aspires to apply her research in the real world by assuring food safety and quality.

Sponsored by Peanut Proud

Exhibitor Showcase

SCHEDULE OF PRESENTATIONS

MONDAY, AUGUST 1

MORNING

10:15 a.m.	Bayer – Protect Your Reputation with Digital Pest Management
11:30 a.m.	Mérieux NutriSciences – Ask the Science Center Pro

AFTERNOON

12:00 p.m.	FlexXray – The Value of Incorporating Foreign Material Inspection Into Routine Food Safety, HACCP and Sustainability Programs
12:30 p.m.	BIOLYPH – Room Temperature Stable Reagents in Less Than 3 Weeks
3:00 p.m.	3M – Food Microbiological Methods: Advances in Technology to Enhance Efficiency
4:30 p.m.	T&D – Temperature Data Loggers and Your Food Safety Plan

TUESDAY, AUGUST 2

MORNING

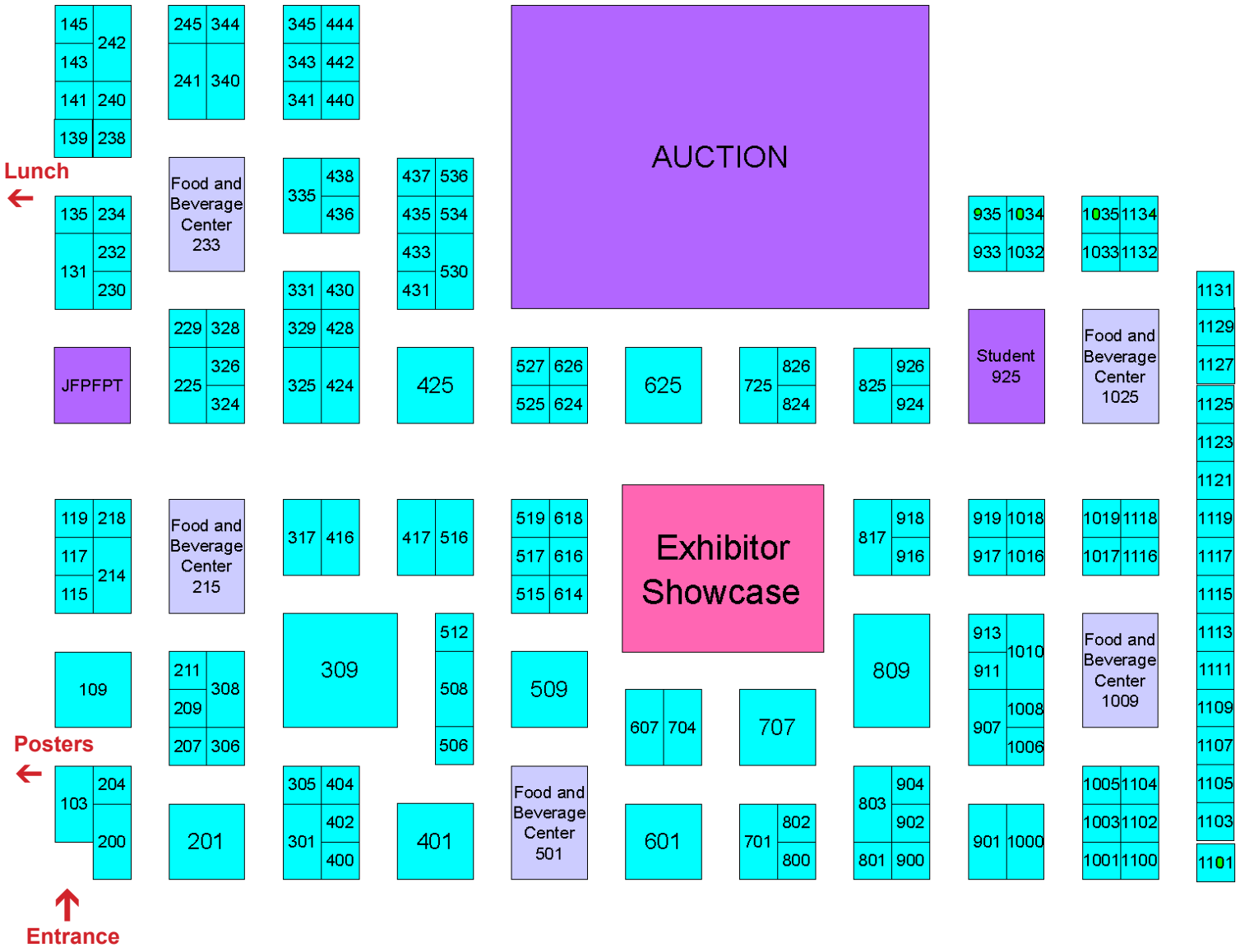
10:15 a.m.	3M – Implementing a Risk-Based Approach to Food Safety
11:30 a.m.	Aptar CSP Technologies – Leveraging Active Material Science Innovations to Mitigate Foodborne Illness and Reduce Fresh Product Spoilage

AFTERNOON

12:00 p.m.	BSI – Mythbusting the Role of Standards

The Exhibitor Showcase is located in the Exhibit Hall.

IAFP 2022 EXHIBIT FLOOR PLAN



EXHIBITORS – ALPHABETICAL LISTING

EXHIBITORS BY BOOTH NUMBER

EXHIBITORS

3-A Sanitary Standards, Inc. **329**
6888 Elm St., Suite 2D
McLean, VA 22101-3829
Phone: +1 703.790.0295
www.3-a.org

3-A SSI leadership consists of representatives of the International Association for Food Protection, International Dairy Foods Association, Food Processing Suppliers Association, and representatives of the USDA and FDA. 3-A SSI develops design criteria for equipment and processing systems using a modern consensus process. 3-A SSI also oversees licensing of the 3-A Symbol, available for voluntary use by fabricators to signify the equipment was verified by independent Third Party Verification inspection to conform to a 3-A Sanitary Standard. Check out the Knowledge Center for free resources on hygienic design, including e-learning modules, video guides, expert resource papers and much more!

3M Food Safety **401**
3M Center, Building 275-5W-05
Maplewood, MN 55144
Phone: +1 800.328.6553
www.3m.com/foodsafety

Today's global food safety professionals need simple, proven solutions that quickly and reliably get the job done. 3M Food Safety is a leader in innovative solutions that help the food and beverage industry optimize the quality and safety of their products for consumer protection and increased efficiency. Products like 3M™ Petrifilm™ Plates, 3M™ Clean-Trace™ Hygiene Monitoring and Management System, 3M™ Molecular Detection System and 3M's comprehensive line of allergen testing kits assist the food industry in achieving peak safety standards with minimum complication and maximum productivity. For more information, visit 3M.com/foodsafety.

A2LA **626**
5202 Presidents Court, Suite 220
Frederick, MD 21703
Phone: +1 301.644.3248
www.a2la.org

A2LA is a non-profit, multi-discipline accreditation body with over 40 years of experience providing internationally recognized accreditation services and training. A2LA's world-class accreditation services encompass testing and calibration laboratories, medical testing laboratories, inspection bodies, proficiency testing providers, reference material producers and product certifiers. Over 3,000 organizations have been accredited by A2LA in numerous fields and industries. Organizations are accredited to international standards (ISO/IEC 17025, ISO/IEC 17020, ISO/IEC 17043, ISO/IEC Guide 34, ISO/IEC Guide 65 and ISO 15189) and field-specific requirements developed with government and industry collaboration. Adherence to international standards can improve your competitive advantage, yet still allow the flexibility to evolve as your business needs evolve. The end result of accreditation improves your organization's ability to make more informed decisions, reduce cost, and manage risk. A2LA offers both public and private on-site training programs to complement the various accreditation programs. A2LA is the largest multi-discipline accreditation body in the U.S. and is internationally recognized through THE International Laboratory Accreditation Cooperation (ILAC). More information about A2LA's accreditation programs, training and membership can be found at www.A2LA.org.

The Acheson Group **435**
13983 Ridge Loop Road
Bigfork, MT 59911
Phone: +1 801.401.2239
www.achesongroup.com

Whether you're seeking to develop, assess, or deploy best practices in your food safety or public health programs, The Acheson Group (TAG) can help. With dedicated resources around the globe, TAG works with clients, large and small, to mitigate operational, regulatory, and reputational risk – and protect their brand. Stop by the TAG booth to chat with our team of experts about your unique situation, participate in our interactive TAG Talks, and connect in our social media event.

Adroit North America **209**
2656 W Montrose Ave., Unit 105
Chicago, IL 60618
Phone: +1 773.417.1221
www.adroitna.com

The Adroit food and beverage consultant team is your proven resource to transform the performance of your operations, including food safety, compliance, supply chain management, S&OP and more. As an information strategy firm that develops and implements integrated multi-channel sales, management, and distribution systems strategies for the entire food and beverage supply chain, our focus is on driving food supply chain agility, speed, and precision.

Your challenge is to stay agile – no matter what disruptions lie ahead. Our expert consultants apply their depth of experience for a transformation approach that improves strategy, operations, and technology for true business performance improvement.

AEMTEK Laboratories **512**
466 Kato Terrace
Fremont, CA 94539
Phone: +1 510.979.1979
www.aemtek.com

AEMTEK is an ISO 17025 accredited third-party laboratory specializing in microbiological testing, environmental monitoring, shelf-life studies, validation studies, research, training, and consulting services for the food, supplement, and beverage industries. For over 18 years, AEMTEK has helped clients obtain accurate, fast, and reliable analytical data and provided holistic solutions to ensure food safety.

Located in the San Francisco Bay Area, AEMTEK is the lab of choice for top food producers around the U.S. Our staff includes seasoned industry professionals and knowledgeable Ph.D. scientists to assist you with everything from simple result interpretation to the design of complex research projects.

AFCO **1005**
550 Development Ave.
Chambersburg, PA 17201
Phone: +1 717.264.9147
www.afcocare.com

AFCO, a leading specialty chemical provider serving the food and beverage processing industry, is a division of Zep Inc., producer of chemicals for the industrial, institutional and consumer markets. AFCO offers high-quality cleaners and sanitizers, antimicrobial inter-

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vention, biofilm removers, equipment systems, and more. Through our Assure™ Sanitation Program, our SQF and HACCP-Educated Food Safety Specialists take pride in working alongside your sanitation staff to provide technical service and support of your sanitation and safety programs, helping you mitigate risk while controlling costs.

AIB International **904**
1213 Bakers Way
Manhattan, KS 66502
Phone: +1 785.706.0157
https://www.aibinternational.com/

For more than 100 years, AIB International has partnered with our clients to bring the enjoyment of safe, high-quality food to consumers everywhere. Through customized Training, Inspections and Consulting, Regulatory assistance and Certification services, our global team of food safety and quality professionals has grown to service more than 120 countries and is committed to helping our customers address virtually every link in their supply chains. Visit www.aibinternational.com for more information.

Amerisan, LLC **328**
1 Chelsea Pkwy., Suites 101-102
Boothwyn, PA 19601
Phone: +1 484.861.2491
www.ameriscan.com

Amerisan is solely focused on the food processing industry. We support our customers with the highest level of customer service, timely delivery of Jan/San and PPE products as well as value added services enabling our customer to provide the ultimate 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 asset.

Amerisan.com

AOAC Research Institute **1107**
2275 Research Blvd., Suite 300
Rockville, MD 20850
Phone: +1 301.924.7077
www.aoac.org

AOAC INTERNATIONAL's *Official Methods of Analysis*℠ (OMA), *Performance Tested Methods*℠ (PTM), and *Reviewed and Recognized*℠ (R^2) programs provide the processes and scientific rigor that enables industry and regulators to keep our food and environment safe. Through consensus-based analytical standards, they are recognized by regulators, provide a globally recognized compendium of approved methods, and are growing worldwide membership with over 3,500 scientific members. AOAC also provides sought after Laboratory Proficiency Testing programs.

Aptar Food + Beverage – Food Protection **924**
125 Westlake Pkwy., Suite 100
Atlanta, GA 30336
Phone: +1 404.344.0796
www.aptarfoodprotection.org

Aptar Food + Beverage – Food Protection leverages material science, active packaging, and equipment and processing expertise to develop advanced systems that help extend freshness and enhance safety for produce and seafood. The company's innovative InvisiShield™ antimicrobial delivery system integrates into sealed packages to protect food products from bacteria, fungi, and viruses to mitigate risk of foodborne illness. In addition to its packaging agnostic solutions for food safety, Aptar also offers a range of trays, pouches, retail and mini containers, slicing equipment, lidding film, and tray-sealing technology.

ASI Food **1102**
500 Northwest Plaza Dr., Suite 700
St. Ann, MO 63074
Phone: +1 314.880.8880
www.asifood.com

Come meet our team so we can make certification easy! At ASI, we realize organizations' challenges in keeping up with highly regulated industries and ever-changing audit requirements. This is why ASI is dedicated to making your inspection or certification process as smooth as possible. ASI offers a full suite of safety and quality solutions to the food and beverage, dietary supplement, cannabis, and consumer goods industries to support your organization's efforts to maintain only the highest product safety and quality standards.

Association of Food and Drug Officials **1116**
155 W. Market St., 3rd Floor
York, PA 17401
Phone: +1 717.757.2888
www.afdo.org

The 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 as members. Industry representatives are welcomed as associate members. AFDO is a mechanism for advancing regulatory program standards that will help to advance an integrated food safety system. The organization also provides training and continuing education as well as networking opportunities that foster understanding and collaboration among all members and an appreciation for each role in the food and medical products safety system.

Bayer **400**
5000 Centregreen Way, #400
Cary, NC 27513
Phone: +1 919.880.8799
www.es.bayer.us

The Rodent Monitoring System (RMS) provides a new perspective on food safety. RMS helps prevent a failed audit, facility shutdown, reputation damage – which are all at risk when the status of the pest management program is unknown. Visit our booth to learn how RMS can help you be more proactive in pest management, provide data to take immediate actions when necessary, and predict future rodent problems. RMS helps improve accountability, compliance and most importantly protects your reputation.

BCN Research Laboratories Inc. **506**
2491 Stock Creek Blvd.
Rockford, TN 37853
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

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sequencing and confirmation by traditional identification techniques. We are ISO 17025:2017 accredited and a WBENC certified women-owned company.

Bia Diagnostics Laboratories **230**
480 Hercules Dr.
Colchester, VT 05446
Phone: +1 802.540.0148
http://www.biadiagnostics.com

Bia Diagnostics is a global leading ISO 17025 accredited food and nutraceutical testing laboratory. With over 40 years of diagnostics experience, we specialize in Food Allergen, GMO, Food Authenticity, and Cannabis/Hemp testing. Focusing on these four 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! Our laboratory utilizes the latest technologies in analysis including ELISA, PCR, HPLC, and GCMS methodology. Bia Diagnostics's team of experienced scientists provide personal customer service, partnering with you to serve as your laboratory.

BIOLYPH **901**
4275 Norex Dr.
Chaska, MN 55318
Phone: +1 952.936.0880
www.biolyph.com

BIOLYPH's Lyophilization Services maximize the quality and value of your Food Safety assay kits by providing years of room temperature stability and minimizing user steps and sources of error. We transform your liquid reagents into LyoSpheres™, precise lyophilized aliquots, and package them inside virtually any device, including tube strips, plates, and custom devices. All components needed for the reaction can be in a single LyoSphere, and rehydration is instantaneous and complete. Assays produced as LyoSpheres™ include *Salmonella*, *Listeria*, *Campylobacter*, *E. coli*, STEC, *Vibrio*, *Shigella*, and more. Please visit our booth to explore how BIOLYPH can add value to your products.

bioMérieux, Inc. **309**
401 N Michigan Ave., Suite 1350
Chicago, IL 60611
Phone: +1 224.213.1756
www.biomerieux-usa.com

At bioMérieux we offer laboratory and at-line microbiology tools that deliver rapid results for pathogen detection, quality indicator enumeration, organism identification and cost-effective, automated solutions, and LEAN approaches to streamline your laboratory. We combine this with our Predictive Diagnostics offering, a truly unique approach to solving your challenges. At its core, Predictive Diagnostics harnesses the power of complex data and provides tangible microbiology solutions for the industry. Our reliable and efficient microbiology solutions are paired with innovative bioinformatics and diagnostics R&D, creating cutting-edge innovations that revolutionize food safety and quality.

Bio-Rad Laboratories, Inc. **225**
2000 Alfred Nobel Dr.
Hercules, CA 94547
Phone: +1 707.363.7658
www.bio-rad.com

Bio-Rad Laboratories has played a leading role in the advancement of scientific discovery for over 60 years. We manufacture tests for food safety with a complete line of solutions for food pathogen testing. We offer a full menu of real-time PCR test kits for the detection of key pathogens, culture media for nutritive enrichment and RAPID chromogenic media with easy colony identification for detection of pathogens and enumeration of quality indicators. As an instrument manufacturer, Bio-Rad also provides instrument options for both low- and high-volume users, including our iQ-Check® Prep automation system.

Bioscience International, Inc. **204**
11333 Woodglen Dr.
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Phone: +1 301.231.7400
www.biosci-intl.com

Our viable air samplers and compressed gas test units raise your Environmental Monitoring Program to a higher level of dependability while achieving conformance with regulatory guidance. Settle plates are no longer ample for reliable monitoring. Used by NASA, NIH, FDA, USDA and major universities, the SAS air samplers are the industry leader in accuracy and dependability, backed by our three ISO 17025 accredited service centers in North America. Our Pinocchio compressed gas testing system is an all-in-one unit – all you need is the gas and a petri plate to perform sampling.

Bluline Solutions **238**
700 Blaw Ave.
Pittsburgh, PA 15238
Phone: +1 800.240.7193
www.blulinesolutions.com

Bluline Solutions simplifies temperature monitoring and data logging tasks for food manufacturers, distribution logistics and the food service industry. Our cloud-connected wireless temperature sensor products provide permanent recording keeping of your critical data, and improves visibility of your temperature data via a web browser or mobile app.

Come visit our booth and ask us about our IdentiCool™ temperature sensor product line. IdentiCool™ is the world's first wireless temperature sensor that is encapsulated in a smart gel material to provide a digital twin measurement of your food products temperature. Cold or hot holding temperature measurement is accurate and reliable with IdentiCool™.

BootieButler **1100**
13720 Rider Trail N.
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Phone: +1 800.710.9863
https://bootiebutler.com/

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BootieButler® Shoe Cover Systems are the ideal shoe cover solution for your business. BootieButler® designed the innovative hands-free dispenser and remover pair to increase safety, compliance, and productivity across many different industries. The system is perfect for high volume applications that require compliance to protect the environment and employees. Visit https://bootiebutler.com/ to learn more. Stop by our booth for a free demo!

Bruker **428**
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www.bruker.com

Bruker Microbiology & Diagnostics offers the MALDI Biotyper® – a validated identification solution.

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BSI Group **1121**
12950 Worldgate Dr., Suite 800
Herndon, VA 20150
Phone: +1 571.205.4838
www.bsigroup.com

BSI believes the world should be supplied with safe, sustainable, and socially responsible food. We offer a broad range of certification and risk management services to help all organizations improve performance.

Our solutions for the food and retail sector include certification, training, assessment, supply chain software, and capacity-building, to enable food organizations to build trust and resilience in:

- Food quality and safety
- Environmental sustainability
- Occupational health, safety and wellbeing
- Information security

Bureau Veritas **534**
1919 Minnesota Court, Suite 500
Mississauga, ON L5N 0C9, Canada
Phone: +1 905.288.2150
www.bvna.com

Bureau Veritas is a recognized world leader in Testing, Training, Inspection and Certification Services. We are your full-service Food Safety partner. With laboratory locations throughout North America, Bureau Veritas couples great customer service with laboratory analyses that meet both the quality requirements and the urgency that food manufacturers demand. Our training center provides both virtual and in-person Food Safety training courses. As an accredited Certification Body, we conduct Food Safety Auditing and Certification services to many standards, such as SQF, SFSF, FAMI-QS, BRCGS, FSSC 22000, 2nd Party Supplier Audits and more!

Center for Foodborne Illness **1001**
at The Ohio State University
Parker Food Science & Technology Building
Parker 211, 2015 Fyfe Road
Columbus, OH 43210
Phone: +1 614.507.5105
www.foodsafety.osu.edu

Center for Foodborne Illness Research and Prevention was cofounded in 2006; transitioned to OSU in 2019. CFI drives the development and implementation of innovative, science-based solutions for food safety challenges. We are knowledge brokers, working to translate science into practical, evidence-informed policies that protect public health and prevent foodborne disease.

- Vision – food systems that consistently deliver safe, affordable, and nutritious food to all.
- Mission – advance food safety systems that prevent foodborne illness and protect public health.
- Strategic Objectives:
  Create and discover knowledge
  Prepare leaders and engaged citizens
  Translate and exchange knowledge
  Responsible stewardship

Certified Group **707**
199 W Rhapsody
San Antonio, TX 78216
Phone: +1 210.689.9006
www.fsns.com

There has never been a better time to reach out to the Certified Group family of companies. With the recent addition of FSNS, the Certified family has an even wider breadth of menu, and now 28 ISO17025 Accredited Laboratories across the U.S., Mexico and Canada to provide you with the local expertise needed to enable your organization's growth. We offer both routine microbiological and chemistry services along with Forensic Analysis, FDA Detention, Sampling, HPP Validation, Shelf-Life Testing, and Process Authority review, as well as Consulting, Certification, and Auditing. Contact us today and experience more from your third-party laboratory provider.

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659 Andover St.
Lawrence, MA 01843
Phone: +1 978.687.9200
www.charm.com

Charm Sciences is a world leader in food safety diagnostics. Charm's two-pronged Sanitation Monitoring Program ensures the highest level of food safety, quality control, and audit compliance using the novaLUM® II-X System and Charm Peel Plate® Microbial Tests with Colony Counter. Charm offers simplified diagnostics and data management solutions to track and trend results with integration to LIMS system. Rely on Charm Sciences for excellence in quality, innovation, and sensitivity to protect your brand!

Check-Points B.V. **440**
Binnenhaven 5
Wageningen, 6709 PD, Netherlands
Phone: +31.317.453908
www.check-points.com

Check-Points is a pioneer in innovative DNA testing methods in the food safety and health sector since its foundation in 2002. Its innovative Check & Trace *Salmonella* method can discriminate over 300 serotypes, including the most relevant serotypes e.g., Typhimurium and Enteritidis, due to the differences in their DNA sequences. This enables the user to confirm *Salmonella* presence and the serotype with a single test in one day. This allows the Check & Trace *Salmonella* test to significantly decrease serotyping lead times and enables quick tracing. Moreover, it is easy to implement in most microbiology laboratories.

Chihon Biotechnology **1033**
2772 Golfview Road, Suite B
Naperville, IL 60563
Phone: +1 630.670.5701
www.chihonbio.com

Found in 2003, Chihon Biotechnology has grown into a leading manufacturer of Nisin and Natamycin. Besides the regular products, our unique highly concentrated Nisin has much lower sodium chloride (90% less) and the ultrafine natamycin offers better coverage. We also produce lauroyl arginine ethyl (LAE), ε-Polylysine and other preservatives. Our R&D is always willing to support our customers with their formulation issues. Our office/warehouse is Chicago and offers excellent customer service and timely delivery.

Clear Labs **607**
1559 Industrial Road
San Carlos, CA 94070
Phone: +1 650.257.3304
www.clearlabs.com

Clear Labs harnesses the power of next-generation sequencing (NGS) to simplify complex diagnostics for clinical and applied markets. By creating a fully automated platform that brings together DNA sequencing, robotics and cloud-based analytics, Clear Labs democratizes genomics applications to deliver increased clarity. Clear Labs' turnkey platform accelerates outcomes and improves accuracy – from foodborne pathogens to infectious diseases, including SARS-CoV-2. Visit www.clearlabs.com.

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ClorDiSys Solutions, Inc. **803**
50 Tannery Road, Suite 1
Branchburg, NJ 08876
Phone: +1 908.236.4100
www.clordisys.com

ClorDiSys specializes in contamination control solutions. ClorDiSys provides preventive and responsive decontamination services, and also sells equipment for in-house use. ClorDiSys offers the most effective method of decontamination available, capable of eliminating all pathogens from the hardest-to-reach cracks to the highest corners of your facility. Using pure chlorine dioxide gas, our process is residue-free and safe on materials. Protect your facility and reduce your risk of contamination by partnering up with the experts in decontamination.

CMX **438**
4180 La Jolla Village Dr., Suite 570
La Jolla, CA 92037
Phone: +1 619.929.1720
www.cmx1.com

The CMX1 Enterprise Quality Management Software (EQMS) Platform provides integrated quality, safety, risk, and compliance management. Solutions include supplier and product life cycle management, policy and procedure management, auditing, checklists and inspections, food safety and quality monitoring, product testing and evaluations, and managing product-related incidents, withdrawals, and recalls. Stop by our booth and learn why so many of the world's leading food brands and service providers including Burger King, Chick-fil-A, Arby's, Taco Bell, Raley's, Wegmans, IHG, Bureau Verita, and more all trust CMX1 to help them and achieve and maintain Quality Excellence.

Copan **817**
Via Perotti 10
Brescia, 25125, Italy
Phone: +366.565.1237
www.copangroup.com

NewLab is one of the newest Copan business units, which provides advanced automated solutions for industrial microbiology. NewLab innovative approach enables companies and laboratories to benefit from efficient sample processing, guaranteeing solid quality performance.

Cyclone™ is our automated walk-away system designed in compliance with ISO standards for microbiological quality control in food, cosmetics and pharmaceutical industries, which increases results accuracy and reproducibility while decreasing time and operational costs.

We possess the broad-minded professionalism common to all the branches of Copan's group, to deal with new requests and tailor our products to your specific needs in today's fast-paced technological scene.

Cornerstone Flooring **918**
8781 Motorsports Way
Brownsburg, IN 46112
Phone: +1 317.852.6522
https://www.cornerstoneflooring.com/

Cornerstone Flooring mitigates bacteria in food manufacturing facilities throughout the U.S. Our flooring and wall systems have been independently tested and show a greater than 99% reduction of surface bacteria. While no product negates the need to sanitize, our systems offer a proactive approach to help you maintain a food safe facility. Our floor and wall systems are comprised of an antimicrobial agent, present throughout the entire system, not just the finish coat. We have 30 years of experience, innovation, and development in the flooring industry and remain a TRUE single source manufacturer and installer.

CultureMediaConcepts® **135**
970 E Orangethorpe Ave., Unit A
Anaheim, CA 92801
Phone: +1 714.773.1726
www.culturemediaconcepts.com

CultureMediaConcepts® is an independent manufacturer of culture media and reagents utilized in microbiological testing. Screening for indicator organisms, environmental monitoring, or testing for foodborne pathogens require specified culture media formulations recommended by the methodology used, the manufacturer of the testing platform, or a governing agency. We specialize in formatting culture media formulations for your specific needs. Our SampleReady® line of prepared dehydrated culture media, offers a RTU format that will eliminate steps of preparing your media and save you hours to results. Our DiluteReady® Sample Dilution Bags offer pre-measured prepared culture media in sterile sample bags for your specific testing application. And, our EnviroReady® sample collection device will give you leverage on environmental monitoring. Come by our booth and let's talk about your specific testing needs.

Decon7 Systems, Inc. **103**
110 North Freeport Pkwy., Suite 120
Coppell, TX 75019
Phone: +1 812.801.6513
www.decon7.com

As an industry leader in disinfection and biosafety for food manufacturers, Decon7 Systems, Inc. exists to make your job easier. Our Decon7™, an EPA-registered, proven broad-spectrum antimicrobial disinfectant, is incredibly versatile with a host of vital applications. Decon7™ is a hydrogen peroxide-based formulation that penetrates and disarms pathogens at a molecular level. Stop by our booth today to chat with our team of experts that can help you take care of a current problem or help prevent potential outbreaks in the future.

Deibel Laboratories **200**
7165 Curtiss Ave.
Sarasota, FL 34231
Phone: +1 941.925.1579
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 fifty 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 sized clientele.

Detectamet Detectable Products **417**
5111 Glen Alden Dr.
Richmond, VA 23231
Phone: +1 804.303.1983
www.detectamet.com

Detectamet is a global manufacturer and supplier of metal detectable and X-Ray-visible products. Working with food, beverage and pharmaceutical industries, our award-winning products help reduce the risk of foreign body contamination, averting the risk of expensive and damaging product recalls. We are an innovative and enterprising company with a continuous desire to improve and evolve our product offering to bring greater food safety standards to our manufacturing clients.

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Eagle Protect PBC **431**
3079 Harrison Ave., #21
South Lake Tahoe, CA 96150
Phone: +1 800.384.3905
www.eagleprotect.com

Eagle Protect has launched its proprietary, multi-layered glove-testing program, Delta Zero (patent pending), ensuring Eagle gloves adhere to the highest level of consistent glove safety and performance, and are absent of unsafe chemicals, toxins and microbial contaminants.

In Eagle's groundbreaking research, over 2,800 disposable gloves (26 different brands) were analyzed. Results discovered hundreds of unique viable microbial species, including *Bacillus cereus*, *E. coli*, *Salmonella*, *Listeria*, *Streptococcus* and *Staphylococcus*, with ~50% having indications of human fecal contamination.

Learn how to mitigate glove risks and safeguard your food safety practices with Delta Zero verified gloves. Visit booth 431.

eBacMap **232**
10653 Progress Way
Cypress, CA 90630
Phone: +1 727.222.6273
www.ebacmap.com

eBacMap® is a patent-pending cloud-based mapping, tracking, and trending software tool that recognizes where environmental pathogen persistence exists in manufacturing facilities and verifies the effectiveness of Sanitation Preventive Controls.

Developed by expert food microbiologists, eBacMap® creates a heat map of your manufacturing facility allowing you to easily organize Environmental Pathogen Data so that you can quickly visualize the physical location and frequency of contaminations. Identifying patterns in positive test results will allow you and your team to recognize recurrences and understand overall data relationships, enabling you to make better targeted and efficient preventive actions.

Ecolab **424**
1 Ecolab Place
St. Paul, MN 55102
Phone: +1 763.843.2237
www.ecolab.com

A trusted partner at nearly three million customer locations, Ecolab (ECL) is the global leader in water, hygiene and infection prevention solutions and services that help protect people, planet and business health. Ecolab delivers comprehensive science-based solutions, data-driven insights and world-class service to advance food safety, help maintain clean and safe environments, optimize water and energy use, and improve operational efficiencies and sustainability for customers in the food, healthcare, hospitality and industrial markets in more than 170 countries around the world. www.ecolab.com. Follow us on LinkedIn @Ecolab, Twitter@Ecolab, Instagram @Ecolab_Inc and Facebook @Ecolab.

Emport LLC **326**
P.O. Box 40188
Pittsburgh, PA 15201
Phone: +1 412.447.1888
www.emportllc.com

Emport LLC specializes in food safety and QA test kits since 2011. Our tests combine user-friendly design with rigorous scientific standards. Alongside the AOAC-approved GlutenTox Pro, we carry AlerTox rapid allergen test kits, FlowThrough Meat Speciation rapid kits, a variety of sampling and swabbing supplies, and sophisticated ELISA allergen kits for lab use. We also offer ISO17025 micro and allergen analyses through our partner labs.

EMSL Analytical, Inc. **1109**
200 Route 130 North
Cinnaminson, NJ 08077
Phone: +1 800.220.3675
www.emsl.com

EMSL Analytical's network of over 46 laboratories has been providing quality analytical services since 1981. Our food laboratory capabilities include: microbiology analysis, nutritional analysis, various food chemistry analysis, allergens, toxins, and adulteration analysis. EMSL's Food Testing Division laboratories are located conveniently across North America. Our Food Chemistry and Nutritional Analysis testing is done at our National Headquarters in Cinnaminson, NJ. Visit www.emsl.com for a list of locations, services, and accreditations.

Enviro Tech Chemical Services, Inc. **704**
500 Winmoore Way
Modesto, CA 95338
Phone: +1 209.581.9576
www.envirotech.com

Food safety has always been a top priority for Enviro Tech. That's why we are leading the formulation and distribution of EPA-registered, patented products that safeguard food, beverages, and facilities.

We're excited to introduce PeraGuard® the world's first dry, granular peracetic acid. This groundbreaking product prevents cross-contamination on food and non-food processing equipment and much more. Its odorless, dust-free formula kills 99.9% of bacterial pathogens in minutes, so it's fast-acting and easy to use.

You can rely on our innovative products to meet the highest sanitation and disinfection requirements, because safety is our goal, our inspiration, and our promise. www.peraguard.com.

Eurofins **317**
21201 Rittenhouse St., Suite B
Des Moines, IA 50321
Phone: +1 515.265.1461
https://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 integrated 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.

Eurofins Abraxis **517**
124 Railroad Dr.
Warminster, PA 18974
Phone: +1 215.357.3911
https://abraxis.eurofins-technologies.com

With over 20 years of history developing, manufacturing, and marketing rapid environmental, food, and life sciences test systems, Eurofins Abraxis is a member of Eurofins Technologies, a fast-growing, global provider of diagnostic test kits, lab consumables and industry-leading ELISA-based instrument platforms supporting rapid testing in the food, feed, environmental, biopharma, and clinical markets. Rapid food test methods (ELISA, lateral flow, PCR) are

available for the detection of Allergens, Pathogens, GMOs, Patulin, Glyphosate, Mycotoxins, VDRs, Seafood Toxins, Vet Diagnostics, Viruses and more with many available on our easy-to-use automated platforms. Many tests are validated by AOAC, USDA, AFNOR, USEPA, GFCO and more.

Extreme Microbial Technologies **1010**
2800 East River Road, Suite A
Moraine, OH 45439
Phone: +1 844.885.0088
https://extrememicrobial.com

EMT's proprietary Total Air and Surface Purification Solutions will reduce microbes (i.e., bacteria, viruses, VOCs, and mold spores) in the air and on surfaces by 99% or more. Our technology utilizes an Ultraviolet bulb which reflects off a proprietary 6 metal coated catalyst cell. The reaction is enhanced by a special reflector. The result is the creation of Energized Hydrogen Peroxide Particles which attacks microbes in the space resulting in a microbe-reduced environment in the air and on surfaces. While this technology attacks the microbes, it is 100% safe for your products and workforce. Because it is a gas, it diffuses into every crack and crevice to reduce the microbes where they live.

FDA/Center for Food Safety and Applied Nutrition **1127**
5001 Campus Drive
College Park, MD 20740
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, and that cosmetic products are safe and properly labeled.

FlexXray, LLC **218**
3751 New York Ave., Suite 130
Arlington, TX 76014
Phone: +1 817.453.3539
www.flexxray.com

Based in Arlington, Texas, FlexXray® is the nation's leading foreign material inspection company, serving a majority of the largest food companies in North America. With customers all over the U.S. and Canada, FlexXray inspects food products for all types of potential contaminants and foreign materials such as metal, plastic, rubber, gasket, and bone. Its custom-built direct x-ray technology detects issues before products go to market, saving clients millions of dollars each year. FlexXray has four strategically located temperature-controlled warehouses in the United States, Illinois, Texas, Connecticut and South Carolina, to best meet the needs of the industry.

Fluxergy **802**
30 Fairbanks, Suite 110
Irvine, CA 92618
Phone: +1 714.763.6247
www.fluxergy.com

Fluxergy is a U.S.-based IVD and laboratory tools manufacturer specializing in near sample testing. Our platform can detect *Salmonella* spp. on-site from environmental sponges within 45 minutes (after enrichment). Fluxergy's primary differentiator is its multimodal platform that allows on-site testing for molecular, immunochemistry, chemistry, and morphology-based markers by technicians with minimal lab training. Our development pipeline includes tests for *Listeria* spp., an allergen panel, as well as the ability to develop custom assays for contaminants and markers that suit your business needs. Fluxergy manufactures all hardware, software, biologics, consumables, and automation equipment in-house and can tailor solutions to your specific food products.

FoodMicro 2022 **1125**
Varnali 29, Chalandri
Athens, 15233, Greece
Phone: +30.21.0683.3600
www.foodmicro2022.com

Food Quality & Safety **911**
111 River St.
Hoboken, NJ 07030
Phone: +1 312.925.7648
www.foodqualityandsafety.com

Food Quality & Safety is the premiere resource for the food and beverage industry. Our well-recognized brand has been providing readers with thought-provoking and relevant information on quality assurance and food safety for more than 25 years. *Food Quality & Safety's* easy-to-digest content is designed for busy professionals, providing practical information that can be applied to their job functions. Our award-winning material covers the latest and most relevant news, regulations, technologies, trends, and issues impacting the food industry.

Food Safety CTS, LLC **1123**
1320 Goodyear Dr., Suite 205
El Paso, TX 79936
Phone: +1 864.633.6325
www.foodsafetycts.com

Food Safety Consulting & Training Solutions (El Paso, TX) and Alimentos y Nutrición (Chihuahua, MX) develop customized food safety and culturally compatible training solutions for many different food industries including e-learning programs. Need to set up a food safety program or HACCP certification training? Our experts will do it! Need to verify your suppliers abroad? Let us conduct a food safety assessment on your behalf. Stop by to see a demonstration of Doctum, our ALL U Can Train e-learning food safety training service. It is easy to use and affordable. We translate science and technology into the food industry language!

Food Safety Magazine **1017**
2401 W Big Beaver Road, Suite 700
Troy, MI 48084
Phone: +1 248.786.1597
https://www.food-safety.com/

For more than 26 years, *Food Safety Magazine* has been the leading provider of content serving food safety/quality professionals worldwide. Bimonthly eMagazine and weekly eNewsletter feature contributions 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. Also, our popular podcast "Food Safety Matters" 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 begin your free subscription and learn more about all *Food Safety Magazine* has to offer.

Food Safety News **442**
227 West Hamilton Lane
Battle Creek, MI 49015
Phone: +1 913.205.3791
www.foodsafetynews.com

Food Safety News has more than 43,000 subscribers, avid readers who receive our news every morning – Monday through Sunday. As an added bonus, our social media following is rapidly approaching 300,000. No other publication can compete with our reach and frequency. No other publication can do as much for establishing your brand or sending qualified leads to your sales team. As the most widely quoted journal covering food safety issues around the world, no other publication can match our North American and international impact either.

Food Safety Summit **1019**
2401 W Big Beaver Road, Suite 700
Troy, MI 48084
Phone: +1 248.502.9067
https://www.food-safety.com/food-safety-summit

The Annual Food Safety Summit, held in Rosemont, IL is the largest solutions-based conference and expo for the food industry in North America and explores the most critical food safety issues facing the food industry today. The program will feature an extensive line-up of educational seminars, high level industry and government speakers, hands-on workshops, certification courses, networking events and a large exhibition floor.

Through in-depth educational sessions and a resource-rich Exhibit Hall, featuring nearly 150 solutions providers, attendees will find practical, real-world solutions to their food safety challenges. Visit www.foodsafetysummit.com for more information and to register today!

Foods Connected **436**
Lower Ground Floor, Old City Factory, 100 Patrick St.
Londonderry, Northern Ireland BT48 7EL, United Kingdom
www.foodsconnected.com

Foods Connected solutions innovate and transform food supply chain processes. Our one-stop shop software solutions give customers the control to ensure they have the right supplier, the right product, the right quality at the best price possible. We have developed a suite of cloud-based tools to help you streamline key processes, improve efficiency, minimise risk and boost profitability spanning 8 core areas: Food Safety and Quality, CSR, Procurement and Supply Chain, Reporting & Analytics, Specifications and NPD, Supplier Compliance and Traceability. Our software is used by some of the world's largest retailers, food processing/manufacturing groups and food service providers.

FREMONTA Corp. **508**
466 Kato Terrace
Fremont, CA 94539
Phone: +1 510.979.1979
www.fremonta.com

FREMONTA Corp. will be displaying the latest in food sampling technology, included advanced methods and materials. Our products will provide food manufacturers from all categories, with less expensive, labor saving, improved food safety testing.

GFSI – The Consumer Goods Forum **143**
47-53 rue Raspail
Levallois-Perret, 92300, France
Phone: +33.776636315
https://mygfsi.com

The Global Food Safety Initiative is a CEO-led Coalition of Action from The Consumer Goods Forum, bringing together 37 retailers and manufacturers and an extended food safety community to help oversee food safety standards for businesses and help provide access to safe food for people everywhere. As one of the world's largest networks to help achieve safe food, GFSI is committed to making food safety everyone's business with the ambition to strengthen and harmonize food safety systems so they are able to feed the growing, global population. To learn more, visit www.mygfsi.com.

Goodway Technologies **1016**
420 West Ave.
Stamford, CT 06909
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. Commercial bakeries, snack producers, produce processing facilities, and breweries are just places where sanitation professionals can find our high-quality machines. Our focus begins with discussing our customers' cleaning and sanitation needs and developing the right approach to exceeding their needs. This includes working on-site with crucial sanitation and plant maintenance decision-makers to establish the correct and most effective and efficient method. We specialize in dry steam cleaning products for the food production markets for packaging machinery, production lines, and conveyor belts that help remove soils, wax, grease, oversprays, allergens, and more while preparing surfaces for more efficient sanitizing. We also offer our BIOSPRAY® surface sanitizer systems for equipment that increase sanitation performance while reducing labor and chemical usage. Biospray patented technology atomizes alcohol sanitizers safely, allowing them to penetrate surface cracks and quickly kill pathogens.

Food and beverage cleaning and equipment sanitizing solutions include:

- Dry steam cleaning solutions
- Conveyor belt cleaning
- Packing machinery and system cleaning
- Tube cleaning systems for chillers, boilers, and heat exchangers
- Equipment surface sanitizing and disinfection
- Hose and pipe cleaning systems
- Production/general surface cleaning and surface sanitation
- Hazardous/flammable powder vacuums

Hamilton Company **306**
4970 Energy Way
Reno, NV 89521
Phone: +1 775.858.3000
www.hamiltoncompany.com

Hamilton Robotics is a global leader in liquid handling and laboratory automation technology, advancing the forensic laboratory analytical sciences through reliability, performance, and flexibility. For more than 70 years, Hamilton has exceeded expectations. The measure of excellence.

Hardy Diagnostics **115**
1430 West McCoy Lane
Santa Maria, CA 93455
Phone: +1 805.346.2766
https://hardydiagnostics.com

Hardy Diagnostics has been in business since 1980 and is 100% employee owned. The company is ISO 13485 certified and manufactures over 2,700 products for microbiological testing. With over 9,000 laboratory customers across a broad spectrum of markets, Hardy Diagnostics understands the microbiological needs of the food testing industry and offers an extensive product portfolio for sample collection and preparation, microbial identification, HACCP compliance, and environmental monitoring. Hardy Diagnostics is uniquely qualified to assist the food processor in achieving its quality goals.

Hazel Analytics **1018**
600 Stewart St., Suite 400
Seattle, WA 98101
Phone: +1 508.844.9906
https://hazelanalytics.com/

Our mission is to improve public health through data-driven technology that effectively informs and connects food service operators, consumers, regulators, and industry providers to drive action.

Stop by our booth to learn why more than half of North America's top food service and retail brands put their trust in Hazel Analytics to keep their guests safe, their reputations strong, and their facilities compliant.

Our customers rely on Hazel technology to proactively monitor food safety and regulatory compliance at over 300,000 locations that serve millions of meals every day in the U.S. and Canada.

Blue Text – IAFP Sustaining Member

Hettich Instruments **444**
100 Cummings Center, Suite 136L
Beverly, MA 01915
Phone: +1 978.232.3957
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 also manufacture and support quality equipment for sample preparation, climate control, and laboratory automation.

HiMedia Laboratories, LLC **800**
507 School House Road
Kennett Square, PA 19348
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.

Hydrite **525**
300 N Patrick Blvd.
Brookfield, WI 53045
Phone: +1 262.792.1450
www.hydrite.com

Hydrite helps protect your brand through creative solutions and unique formulations. Our customized programs focus on effective and efficient solutions designed to meet specific customer needs. Hydrite offers ingredients, processing aids, equipment, sanitation and antimicrobial products, wastewater and foam control chemistries, technical service and support, and customized training programs.

Hygiena **601**
941 Avenida Acaso
Camarillo, CA 93012
Phone: +1 805.738.6680
www.hygiena.com

Hygiena is a global leader in rapid diagnostic tests that are reliable, easy-to-use and accurate, backed by industry-leading customer service and support. We help create a safer world and protect lives by providing solutions that make the global food supply more secure.

We support our customers by delivering with the competitive advantage of operating at the intersection of innovation in tech, biotech, and software as a service (SaaS). We support our customers by providing comprehensive solutions that significantly enhance environmental hygiene monitoring, arenas of pathogen detection and food authenticity diagnostics along with data analytics. Through our industry-leading brands, including EnSURE™, SureTrend™, UltraSnap™, MicroSnap™, BAX®, foodproof®, and BioChek®, we significantly enhance the hygiene, quality and safety landscape, with unmatched tools, in industries such as food and beverage processing and manufacturing, smart veterinary diagnostics, hospitality, and more.

We are dedicated to our mission and manufacturing best-in-class, One Health diagnostics. With a sizable global presence, Hygiena is headquartered in Camarillo, California with several offices and customer application centers including locations in Wilmington, DE, Santa Ana, CA, Germany, the United Kingdom, the Netherlands, Spain, Mexico, China, and Africa. We also partner with over 180 distributors in more than 100 countries worldwide. We are proud to partner with key leaders in the industries we serve and professional organizations that share our values and mission such as IAFP. To learn more, visit www.hygiena.com.

IEH Laboratories & Consulting Group **416**
15300 Bothell Way NE
Lake Forest Park, WA 98155
Phone: +1 206.522.5432
www.iehinc.com

At IEH, our mission is to facilitate efficient, sustainable production of wholesome foods, and to protect the environment. IEH works with food companies to design, implement and monitor proactive and robust food safety and quality systems.

IEH experts have a diverse range of expertise includes crisis management and prevention, epidemiology, infection control, preparation of environmental monitoring plans, sanitation assessments and reviews, process authority opinions, thermal and aseptic processing, testing, validation studies, challenge studies, determination of shelf life and shelf-life extension, labeling, risk assessment, gap analysis and more. Contact IEH for more questions or inquiries at info@iehinc.com or call +1 206.522.5432.

IFC **305**
13420 W 99th St.
Lenexa, KS 66215
Phone: +1 913.397.1180
www.indfumco.com

IFC – the Industrial Fumigant Company – is a national provider of pest management and sanitation solutions exclusively to the food industry. The knowledge and expertise we have gained comes from working directly with the food and commodity industries since 1937.

IFC has developed a market-leading reputation for providing consistent, reliable and high-quality service to our clients. We maintain this reputation by focusing our efforts on sustaining the highest standards of quality, safety, honesty and integrity in all areas of our business.

ILSI **234**
740 15th St. NW, Suite 600
Washington, D.C. 20005
Phone: +1 202.659.0074
https://ilsi.org/

ILSI (www.ilsi.org) is a global, nonprofit federation dedicated to generating and advancing emerging science and groundbreaking research to ensure foods are safe, nutritious and sustainable, and that they improve planetary and human health and well-being in the 21st century. ILSI convenes scientists at the forefront of research on nutrition, food safety and sustainability, and operates within a framework of the highest principles of scientific integrity. ILSI's trusted experts and volunteers around the world work synergistically and transparently across academia and the public and private sectors. Follow ILSI on Twitter, Facebook, LinkedIn and YouTube.

INFICON **614**
2 Technology Place
East Syracuse, NY 13057
Phone: +1 315.434.1126
www.inficon.com

INFICON, one of the world's leading innovators in leak-testing technology, has leveraged their expertise to create the Contura S-series leak detector for the food and packaging industries. Contura provides non-destructive testing for large and micro leaks simply and quantitatively, facilitating advancements in MAP, compostable and flexible package testing.

InnovaPrep **824**
132 East Main St., #68
Drexel, MO 64742
Phone: +1 816.619.3375
www.innovaprep.com

InnovaPrep provides air, surface, and liquid biomonitoring tools to help dramatically improve limit of detection for contamination monitoring in food production facilities. Sample-to-answer can be achieved in a single shift when paired with rapid molecular analysis methods for a faster, easier, and better monitoring program. InnovaPrep's Concentrating Pipette Select™ provides rapid concentration of pathogens, spoilage organisms, and particulate contamination from liquid food samples and beverages. Visit our booth for a demonstration.

International Association for Food Protection **Foyer**
2900 100th St., Suite 309
Des Moines, IA 50322
Phone: +1 515.276.3344
www.foodprotection.org

The International Association for Food Protection (IAFP) represents a broad range of members with a singular focus — protecting the global food supply. Within the association, you will find educators, government officials, microbiologists, food industry executives and quality control professionals who are involved in all aspects of growing, storing, transporting, processing and preparing all types of foods.Working together, IAFP members, representing more than 50 countries, help the association achieve its mission through networking, educational programs, journals, career opportunities and numerous other resources. This Web site is a resource for members as well as non-members who want to join us in making a difference in the public health of our global community.

International Association for Food Protection – Student PDG **925**
2900 100th St., Suite 309
Des Moines, IA 50322
Phone: +1 515.276.3344
www.foodprotection.org

Welcome, students, to IAFP 2022! If you wish to take control of your career and enrich your IAFP experience by interacting with other students and networking with professionals, get involved with the IAFP Student Group. We are an organization of undergraduate and graduate students who wish to enhance food safety through active participation in IAFP. Stop by our booth to meet your colleagues, exchange ideas, and become involved in future student group activities.

International Food & Meat Topics **343**
Positive Action Publictions Ltd.
Thorpe House, Kellythorpe Estate
Driffield, East Yorkshire YO25 9DJ, United Kingdom
Phone: +44.13.724.1724
www.positiveaction.co.uk

The technical magazine for progressive food and meat professionals seeking the latest global technical information. Published 6 times each year, it offers technical articles that are easy to read, short refresher articles and reviews of the latest research and products. This makes International Food & Meat Topics essential reading for today's managers working in food and meat production.

Interscience Laboratories, Inc. **701**
32 Cummings Park
Woburn, MA 1801
Phone: +1 781.937.0007
www.interscience.com

Interscience has been a key player in microbiology control since 1979. Designer and manufacturer, the company equips laboratories in the food, pharmaceutical, cosmetic and research industries in more than 130 countries, to enable them to guaranty healthy products for consumers. Our product range covers equipment from sample preparation to bacterial analysis, and includes the gravimetric dilutors, lab blenders, peristaltic dispensing pumps, automatic spiral platers and colony counters. We will be delighted to show you our products at IAFP, including the revolutionary ScanStation real-time incubator and colony counter.

Intertek Alchemy **207**
5301 Riata Park Court, Building F
Austin, TX 78727
Phone: +1 866.463.5117
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.

Kikkoman **1104**
31 Bush Cabin Court
Parkton, MD 21120
Phone: +1 443.244.5245
www.biochemifa.kikkoman.com

Kikkoman Biochemifa Company (div. of Kikkoman Foods) provides rapid/proven microbial test solutions.

Labplas **325**
1951 Nobel St.
Sainte-Julie, QC J3E 1Z6, Canada
Phone: +1 450.649.7343
www.labplas.com

Founded in 1987 and based in Quebec, Canada, Labplas manufactures a range of sterile sampling products that meet the highly specialized needs of food safety testing and compositional analysis in the agri-food, pharmaceutical, veterinary, and environmental industries, and in laboratory research. Our sampling solutions simplify the sample collection, transportation, and analysis processes, and are available in over 60 countries through our extensive network of independent distributors.

At Labplas, we focus on quality, innovation, communication, team spirit and respect. We regularly undertake research and development activities to develop new products and continuously improve our production process. Labplas is also the only company to offer a range of sterile biodegradable sampling products.

Lakeland University **344**
W3718 South Dr.
Plymouth, WI 53073
Phone: +1 920.565.1000
www.lakeland.edu

Introducing Lakeland University's Food Safety & Quality Program – The nation's first bachelor's degree of its kind. Lakeland worked with some of the biggest names in the industry to create this unique degree, which is ideal to help develop your workforce.

Founded in 1862 in Sheboygan County, Wisconsin, Lakeland University is a four-year, private university offering 35+ degree and certificate programs. Lakeland is accredited by the Higher Learning Commission.

Our corporate partnership program provides up to a 20% tuition discount on classes taken via our William R. Kellett School (evening/online) designed for the busy adult. Learn more about Lakeland at lakeland.edu.

Blue Text – IAFP Sustaining Member

LGC ASSURE **139**
1159 Business Park Dr.
Traverse City, MI 49686
Phone: +1 231.668.9700
www.lgcstandards.com/pt

LGC ASSURE improves assurance across your site, operation or supply chain network.

AXIO is a global leading proficiency testing provider, bringing technical expertise and influence to drive the future of quality assurance and accreditation. It provides proficiency testing schemes with localized support across a global network of over 13,000 laboratories in more than 160 countries, conducting over 2,000 proficiency tests each year.

BRCGS is a market-leading global brand that helps build confidence in the supply chain. Its Global Standards across many sectors set the benchmark for good manufacturing practice, and help provide assurance to customers that products are safe, legal and of high quality.

Safefood 360° is the food safety, quality and compliance management software for the forward-thinking company. Designed by food safety experts, Safefood 360° offers a comprehensive suite of software solutions specifically designed to help food companies maintain compliance and drive oversight of operations.

Matrix Sciences **907**
1061 Feehanville Dr.
Mount Prospect, IL 60661
Phone: +1 920.634.6166
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.

Mérieux NutriSciences **201**
401 N Michigan Ave., Suite 1400
Chicago, IL 60611
Phone: +1 312.938.5151
https://www.merieuxnutrisciences.com/us/en

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 make 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.

METTLER TOLEDO **437**
1900 Polaris Pkwy.
Columbus, OH 43240
Phone: +1 800.638.8537
www.mt.com

METTLER TOLEDO offers solutions for food protection through laboratory weighing and analytical instruments.

Featured METTLER TOLEDO Products at IAFP 2022: Densito, EasyBrix, Easy R40, Easy D30/D4 or D4, T5 Excellence, UV Vis 5, XSR6002s, XPR205, Seven Direct SD23, Seven2Go, Moisture Analyzer.

Visit our booth to connect with our experts and learn more about the various products and solutions we offer.

Michelson Laboratories, Inc. **1032**
6280 Chalet Drive
Commerce, CA 90040
Phone: +1 562.928.0553
www.michelsonlab.com

Since 1970, Michelson Laboratories has provided complete chemical and microbiological analyses to the food and environmental industries throughout the country. We offer rapid turnaround time, accurate, reliable results and excellent customer service. We specialize in a number of methodologies for indicator organism and pathogen analysis, including PCR, as well as shelf life and challenge studies. Our chemistry labs offer antibiotic residue and melamine testing by LC/MS in addition to nutritional labeling, pesticide analysis, heavy metals by ICP/MS, GMO, aflatoxins and more. We also specialize in the sampling and analysis of products on FDA import alert. ISO/IEC 17025 accredited laboratories in Southern and Northern California.

Micro Essential Laboratory **527**
4224 Ave. H
Brooklyn, NY 11210
Phone: +1 718.928.2913
www.microessentiallab.com

Micro Essential has been a market leader in pH, sanitizer, and disinfectant testing technologies, serving the food service and hospitality industries since 1934. Our focus on customer satisfaction and product quality ensures your regulatory compliance and protects both your customers and your brand.

Microbac Laboratories, Inc. **1000**
2009 Mackenzie Way, Suite 100
Cranberry Township, PA 16066
Phone: +1 412.459.8761
https://www.microbac.com/

From farm to fork, Microbac helps our clients manage food quality and safety risks to protect consumers and their brands through the largest network of privately held testing facilities in the United States. Our industry expertise and analytical strength support your food safety programs for compliance with FSMA regulations. As an ISO 17025-accredited supplier for end-to-end food testing, we serve all food industry segments with services such as: food safety and quality testing; nutritional analysis and label claims; environmental monitoring; and shelf-life and stability studies. Microbac is on a mission to create a better world, one test at a time.

Microbiologics **801**
200 Cooper Ave. N
St. Cloud, MN 56303
Phone: +1 320.217.6606
www.microbiologics.com

Microbiologics is the world's leading experts and go-to collaborators for biological products and services, focused on protecting the health and safety of people around the world. We partner with pharmaceutical, biotechnology and medical device companies to bring new life-changing diagnostic assays, drugs and vaccines to market safely and efficiently. With a highly collaborative approach, we provide contract research, antimicrobial and antiviral testing, assay development, biomaterial design services and more. As a trusted industry partner with more than 5 decades of experience, our knowledgeable team is ready to answer your questions and get started with designing a customized program to fit your unique project needs.

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Microbiology International **242**
5350 Partners Court
Frederick, MD 21703
Phone: +1 301.662.6835
www.800ezmicro.com

Stop by the Microbiology International booth to learn about our EZ-Media Solutions. Whether you are making media in-house or purchasing prepared media, we can save you time and money. Our Systec MediaPrep automated media sterilizers and MediaFill plate pourers are perfect for in-house media-making. Prepared media options include MediaBox™ sterile liquids, our novel, ready-to-use enrichment broths. EZ-CHROM chromogenic media is perfect for identification and confirmation; and is now available in prepared plates and powder media. Ask us about OEM manufacturing capabilities, and private labels!

Midland Scientific **1008**
10651 Chandler Road, Suite 103
La Vista, NE 68128
Phone: +1 402.952.4211
www.midlandsci.com

Midland Scientific is a full-line distributor of laboratory supplies including chemicals, equipment, and consumables. Our customer service and distribution centers, along with our sales force, span the entire United States to ensure timely delivery of your products. We pride ourselves in offering superior service to the customer through a helpful and friendly staff, quality products, competitive pricing, and extensive product options.

MilliporeSigma **809**
400 Summit Dr.
Burlington, MA 01803
Phone: +1 800.645.5476
www.milliporesigma.com

MilliporeSigma, the U.S. life science business of Merck KGaA, Darmstadt, Germany, is here to partner with food safety teams enabling you to improve lab testing efficiencies with reliable products and services that meet ever changing regulations. It is through our collaborations that we can advance the safety and analysis of foods and beverages using trusted brands like Millipore® with microbiology solutions for hygiene, environmental monitoring and pathogen detection, Supelco® analytical solutions for analysis of food contamination and authenticity,

Milli-Q® lab water solutions and Sigma Aldrich lab and production materials, including chemicals, inorganics and solvents throughout the supply chain, manufacturing and distribution.

National Environmental Health Association **616**
720 S Colorado Blvd., Suite 1000-N
Denver, CO 80246-1926
Phone: +1 303.756.9090
www.neha.org

The National Environmental Health Association (NEHA) is a professional society with more than 6,000 governmental, private, academic, and uniformed services sector environmental health professionals in the U.S., its territories, and internationally. NEHA is the profession's strongest advocate for excellence in the practice of environmental health as it delivers on its mission to build, sustain, and empower an effective environmental health workforce. This mission is fulfilled in the products and services offered by NEHA to advance the environmental health professional through credentialing, training, education, networking, professional development, and policy involvement opportunities. Learn more about NEHA at www.neha.org.

Nelson-Jameson, Inc. **214**
3200 S Central Ave., P.O. Box 647
Marshfield, WI 54449
Phone: +1 800.826.8302
www.nelsonjameson.com

For 75 years, Nelson-Jameson has been a complete source of food processing supplies including sanitation and janitorial, production and material handling, processing and flow control, laboratory and QA/QC, safety and personnel, and packaging and ingredients.

Nemis Technologies AG **229**
Ueberlandstrasse 109
Duebendorf, 8600, Switzerland
Phone: +41.76.395.8703
www.nemistech.com

Swiss start-up Nemis Technologies specializes in the development of simple, safe, and on-site pathogen detection solutions across a wide range of applications in the food industry.

The N-Light™ environmental monitoring series can be used anywhere by anyone, empowering food producers to take back control over their quality management processes. The availability of this precise and affordable method allows for more extensive and frequent screening, providing critical information to detect and eliminate potential contamination hotspots after only 24 hours.

While the rapid test for *Listeria monocytogenes* is already commercially available in Europe, the equivalent for *Salmonella* will be launched in 2022.

NEOGEN **625**
620 Lesher Place
Lansing, MI 48912
Phone: +1 517.372.9200
www.neogen.com

At NEOGEN, we partner with our customers to protect and enhance the world's level of food and animal safety by offering a diverse suite of solutions for the food, beverage, animal protein, and agriculture industries empowering our customers to safeguard their brands and create better products.

Nestlé Quality Assurance Center (NQAC) Dublin **618**
6625 Eiterman Road
Dublin, OH 43016
Phone: +1 614.526.5345
www.nqacdublin.com

At the Nestlé Quality Assurance Center (NQAC) Dublin, we work to ensure our customers feel confident in the results they receive from us. Our laboratory tests thousands of products to verify compliance with regulatory and standards.

We support manufacturers, processors, ingredient suppliers, and retailers worldwide. These companies rely on us to provide the highest quality food safety testing and services, from routine to highly-specialized, to meet their product needs.

It is an important responsibility as a food safety leader to help protect consumers and food industry businesses. We hold all products we test to the utmost safety and quality standards.

Neutec Group, Inc. **530**
1 Lenox Ave.
Farmingdale, NY 11735
Phone: +1 516.870.0877
https://neutecgroup.com/

Neutec Group is a market leader in technologies for QC and R&D laboratories. At IAFP 2022, we will showcase our Water Activity Meters (a_w), Sterilizers, Media Preparators, Agar Fillers, XY Tube Fillers, Spiral Platers and Automated Colony Counters.

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Novolyze **340**
185 Alewife Brook Pkwy., Suite 410
Cambridge, MA 02138
Phone: +33.358.287792
www.novolyze.com

Novolyze empowers food and beverage companies to enhance food safety and quality performance through digitalization. The company was created with the ambition to invent a novel way to envision food safety and quality, which relies less on finished product testing and leads to superior positive impacts in environmental sustainability, yield, and production. For more information, please visit www.novolyze.com.

Odyssey Technical Solutions **402**
2000 Steam Way
Round Rock, TX 78665
Phone: +1 512.592.1514
www.odysseyrf.com

Food safety through technology – from "science to success" in mitigating mold and foodborne pathogens through microwave technology. Project plans include product problem identification, inoculation studies, mitigation path, pilot line and production units for permanent mitigation/safety, continuing service and support. This is a new cutting-edge technology with much interest.

Orkin **1117**
2170 Piedmont Road NE
Atlanta, GA 30324
Phone: +1 404.214.3554
https://www.orkin.com/commercial

You work hard to keep your products and employees safe while maintaining smooth operations. And your focus should be on your business, not pest control. With over 120 years of experience, thousands of food processing customers, and a national footprint, Orkin® is the pest control industry leader you can count on. Learn what absolute confidence in your pest control looks like. Call 1-800-ORKIN NOW or visit orkin.com/commercial.

Oxford Nanopore Technologies **1111**
101 Avenue of the Americas
New York, NY 10013
Phone: +1 704.221.2968
www.nanoporetech.com

Oxford Nanopore Technologies has developed the world's first and only nanopore DNA and RNA sequencing devices. Access real-time, scalable sequencing technology and unrestricted read lengths, whether in scientific research, education, or real-world applications.

Partnership for Food Safety Education **240**
2345 Crystal Dr., Suite 800
Arlington, VA 22202
Phone: +1 202.220.0651
www.fightbac.org

You're working hard to prevent foodborne illness – thank you! Preventing illness is a collaborative effort. The Partnership for Food Safety Education leads in bringing together industry, consumer groups, and federal agencies to ensure an evidence-based and consistent approach to supporting the home cook. Stop by our booth to learn more about how you can enhance your efforts in illness prevention with effective strategies for influencing food handling and hand hygiene behaviors of every U.S. citizen.

PathogenDx **241**
9375 E. Shea Blvd., Suite 100
Scottsdale, AZ 85260
Phone: +1 800.641.5751
www.pathogendx.com

PathogenDx develops Molecular-based Multiplex assays and Software for the food market. Our rapid technology provides same-day test results for both quantitative and qualitative identification of bacterial, fungal and virus pathogens.

Pathotrak Inc. **900**
387 Technology Dr., Suite 2122
College Park, MD 20742
Phone: +1 608.770.4899
www.pathotrak.com

Pathotrak's Next Gen Enrichment: Results for pathogen detection in food in less than 8 hours when combined with the BAX or the IQ-Check PCR systems. AOAC license 022204.

Penn State Extension **119**
337 Agriculture Administration Bldg.
University Park, PA 16802
Phone: +1 814.865.5409
https://extension.psu.edu/food-safety-and-quality

Visit the Penn State Extension Food Safety and Quality booth to learn more about programs, services, and curricula that support safe and modern food handling. Our expertise includes training and technical support to all segments along the food supply chain including farmers, industry partners, food service and retail workers, and individual consumers. We offer specialized Food Safety and Modernization Act (FSMA) trainings, Foreign Supplier Verification Programs (FSVP), Food Defense, Hazard Analysis Critical Control Points (HACCP), and other industry specific training in dairy, meat, and wine; retail food service; and home food preservation.

Perry Johnson Registrars Food Safety, Inc. **902**
755 West Big Beaver, Suite 1390
Troy, MI 48084
Phone: +1 248.519.2523
www.pjrfsi.com

Perry Johnson Registrars Food Safety, Inc. (PJRFSI) is a Global Assurance Certification Body who provides audit, training and risk management services to virtually every industry. PJRFSI services clients around the world managing risk within their organization and that of their supply chain. We are a fully accredited body, offering services for globally recognized accredited 3rd party standards such as GFSI and ISO as well as 2nd party programs including GMP, GDP, and Cannabis. With over 11,000 clients globally across 50 countries, we are well suited to meet your needs.

Polyskope Labs **536**
755 Research Pkwy., Suite 459
Oklahoma City, OK 73104
Phone: +1 405.820.2825
www.polyskopelabs.com

Polyskope labs is a company that was founded with extensive multiplex PCR experience. The company discovered and patented its own media and PCR kit called PolySkope One (Patent # WO2016164407A3) that uses a single, overnight enrichment to individually or simultaneously detect all of the most common foodborne pathogens: *E. coli* O157:H7, *Shiga* Toxin *E. coli* (STEC), *Salmonella* spp., and *Listeria monocytogenes* and species. The assay is modular and flexible, allowing selection of pathogens based up to the last minute with a single, simplified protocol that does not require a Ph.D. to run it.

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Ponte **933**
1645 SW 108th Terrace
Davie, FL 33324
Phone: +1 857.234.2434
www.compact-dry.com

Ponte is a company dedicated to providing a complete solution to the needs of our clients and will not stop until the client´s needs are fully satisfied. We offer rapid methods for the quality control of the food industry. We represent the Compact Dry brand for the America´s and can offer many alternatives to help customers achieve better and faster results at a competitive price.

Prevenio **345**
10 Finderne Ave.
Bridgewater, NJ 08807
Phone: +1 906.282.9573
www.prevenio.com

Prevenio can help you maximize the safety and efficacy for predictable operations with our full-service, private laboratory specializing in microbiology focused on both field and R&D testing. We offer complete testing services following USDA testing methods with quick turn-around times. These services include pathogen testing, in-plant bio-mapping and product validation studies. Come stop by Booth #345 to meet our team and learn more about how our lab can help support your facilities!

Prognosis Biotech **1129**
12060 Miramar Pkwy.
Miramar, FL 33025
Phone: +1 877.888.0655
www.prognosis-biotech.com

Prognosis Biotech is an innovative biotechnology company, specialized in developing and manufacturing next-generation quantitative ELISA and Lateral Flow testing technologies for food & beverage and agricultural safety. The typical matrices we work with include: corn, wheat, soy and more. Our European made technology is consistently improved through proficiency testing with accrediting agencies worldwide (i.e., ISO, FAPAS) and delivered to you through our newly established center of innovation in the United States. The Prognosis R&D team works around the clock to ensure that our analysis kits that meet customers' demands while meeting both USDA-GIPSA and AOAC testing criteria in the field.

Proteon Pharmaceuticals S.A. **341**
Tylna 3A
Lodz, 90-364, Poland
Phone: +48.515.956.232
www.proteonpharma.com

Proteon Pharmaceuticals S.A. is a global leader in bacteriophage (phage) technology for livestock farming and aquaculture. Proteon's mission is to eliminate the need for unnecessary antibiotic use, reducing the risk of antimicrobial resistance (AMR), as well as to increase the sustainability of protein production through the reduction of waste and improvement of on-farm efficiency. Our products function by modulating the microbiome enabling prophylactic health. We have created a precision phage product development platform that uses -omics technologies, molecular biology, bioinformatics, and artificial intelligence (AI) to create effective, reliable, and safe antibacterial solutions for animal and human health. For more information, visit www.proteonpharma.com.

Provision Analytics **245**
1215 13 St. NE, #201
Calgary, AB T2G 4Y3, Canada
Phone: +1 403.519.1689
www.provision.io

Provision makes cloud software to streamline food safety and QA. Clients can build simple digital templates that expedite record-keeping, with automatic schedules, rules, and alerts that increase compliance. All food safety and quality data is centralized in one hub with automatic history and customizable reporting. This makes it faster to complete audits, and easier to analyze processes.

PURE Bioscience, Inc. **141**
771 Jamacha Road, #512
El Cajon, CA 92019-3202
Phone: +1 619.596.8600
www.purebio.com

PURE Bioscience provides antimicrobial products in the food safety arena to combat the health and environmental challenges of pathogen and hygienic control. Based on our proprietary Silver Dihydrogen Citrate (SDC) broad-spectrum, antimicrobial, which is distinguished from existing products in the marketplace by its superior efficacy, reduced toxicity and mitigation of bacterial resistance. Our products include: PURE Hard Surface, a versatile hard surface disinfectant and no-rinse food contact surface sanitizer demonstrating rapid kill times in a user-friendly formulation, and PURE Control, an FDA-approved (Food Contact Notification 1600) food contact antimicrobial for direct application to produce during processing to reduce pathogen populations.

PureLine **515**
1241 N Ellis St.
Bensenville, IL 60106
Phone: +1 847.963.8465
www.pureline.com

Reset the environment! For over 30 years, PureLine has been providing chlorine dioxide sanitation solutions that are customized to our food customers' needs. PureLine offers a full line of chlorine dioxide products and services at a cost-effective price. All PureLine chlorine dioxide treatments are backed by a 6-log kill guarantee. Stop by the PureLine booth for free samples or to setup free onsite training.

Q Laboratories **430**
1930 Radcliff Dr.
Cincinnati, OH 45204-1823
Phone: +1 513.471.1300
www.qlaboratories.com

Full-Service Testing Laboratory. Serving the Food, Drug and Personal Care Industries. Experience what Q can do for you!

QSI **919**
412 Georgia Ave., Suite 300
Chattanooga, TN 37403
Phone: +1 888.484.6248
www.vincitgroup.com

QSI is the premier contract sanitation option for food processing in America. Our Human Safety and Food Safety divisions are continually innovating, discovering new ways to sanitize our clients' facilities effectively and efficiently.

For us, Food Protection isn't of secondary concern—it's our business model. We thrive on an ethic of excellence, offering every partner the assurance that every unit is the best it can be. With QSI, your customers and brand have never been safer.

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QualiTru Sampling Systems **913**
471 Hayward Ave. N
Oakdale, MN 55128
Phone: +1 651.501.2337
www.qualitru.com

Since 1983, QualiTru has been the pioneering leader in the science of aseptic and representative sampling. Known for its expertise and commitment to building awareness of aseptic sampling as a critical means of ensuring consumer health and food safety, the company helps the dairy and liquid food industries produce safe, quality products through innovative sampling technologies that are easy-to-use, versatile and cost-effective. The company's high-quality sampling products have been performing flawlessly for over three decades, in over 30 countries worldwide. For more information, visit www.qualitru.com.

Quality Assurance & Food Safety Magazine **916**
5811 Canal Road
Valley View, OH 44125
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 **331**
2725 Curtiss St.
Downers Grove, IL 60515
Phone: +1 630.969.5300
www.rf-products.net

R & F Products is the developer/producer of chromogenic media for food, environmental, and clinical pathogens. R & F Products' mission is to produce unique and innovative chromogenic plating media and enrichment broths that will enhance and improve laboratory efficiency, accuracy, sensitivity, and specificity for pathogen isolation. R & F Products has 13 media patent/patent applications for chromogenic media isolating the following pathogens: *Escherichia coli* O157:H7, *Listeria monocytogenes*, *Salmonella*, *Bacillus cereus/Bacillus thuringiensis*, *Enterobacter sakazakii* (*Cronobacter* sp.), *Bacillus anthracis*, *Listeria* spp./*Listeria monocytogenes*, *Listeria* spp., *Shigella* spp., *Campylobacter jejuni*/*C. coli*, *Yersinia pestis*, and non-O157 STEC. In addition, R & F Products will be introducing the first chromogenic detection system (including broth and plating medium) for the isolation of *Arcobacter butzleri*, *Arcobacter cryaerophilus*, and *Arcobacter skirrowii* in the next several months.

Randox Food Diagnostics **117**
515 Industrial Blvd.
Kearneysville, WV 25430
Phone: +1 304.728.2890
https://www.randoxfood.com

Randox Food Diagnostics provides the global food market with tools for the screening of antimicrobials, growth promoting hormones, toxins and drugs of abuse in animals and food produce through Biochip Array Technology (BAT) and ELISA solutions. Biochip Array Technology is a platform that can screen for up to 54 food or feed samples and provide results for drug residues and toxins in under 3 hours, saving the user time and money. Our comprehensive range and trusted screening solutions are intertwined with continually improving the standards of global food safety, ensuring that better science means safer food.

Realzyme LLC **826**
219 South Pioneer Blvd., Suite E
Springboro, OH 45066
Phone: +1 937.350.5660
www.realzyme.com

Realzyme and Realco are the world leaders in the development, production, and sale of enzyme-based hygiene solutions and processes, including biofilm treatment solutions, for food and beverage, restaurants, healthcare facilities, and more. Our R&D department is constantly working to produce new products, improve manufacturing processes and develop new applications. The result of this research allows Realco / Realzyme to regularly release innovative products to the market that best meets the specific requirements of customers and consumers. We are also a dynamic contributor to sustainable development, promoting the well-being of future generations.

Remco **425**
4735 W 106th St.
Zionsville, IN 46077
Phone: +1 317.876.9856
www.remcoproducts.com

Remco provides color-coded cleaning and material-handling tools designed with the food industry's needs in mind. As Vikan's dedicated presence in North America, we sell their advanced line of cleaning tools along with our own material handling tools. Our tools are hygienically designed and come in up to 12 colors.

Rheonix, Inc. **825**
10 Brown Road
Ithaca, NY 14850
Phone: +1 302.287.1306
www.rheonix.com

Persistent *Listeria* can be a recurring headache. With the Listeria PatternAlert™ assay, they don't have to be. The Rheonix Encompass workstation enables automated high multiplexing at an affordable price. The Listeria PatternAlert™ assay allows for the unprecedented ability to rapidly test for persistent strains of *Listeria* in the manufacturing environment. Stop by the Rheonix booth to find out more.

Rochester Midland Corporation – Food Safety Division **211**
155 Paragon Dr.
Rochester, NY 14624
Phone: +1 800.836.1627
www.rochestermidland.com

Rochester Midland provides a food safety and sanitation program for food/beverage manufacturers focused on innovative solutions through chemicals, process improvements, training, and technical support.

Romer Labs **509**
130 Sandy Dr.
Newark, DE 19713
Phone: +1 302.423.0462
www.romerlabs.com

With almost 40 years of experience, Romer Labs is a leading supplier of diagnostic solutions for the agricultural, food and feed markets offering a broad range of innovative testing solutions covering mycotoxins, food pathogens, food allergens including gluten, GMOs, and various other food contaminants. Furthermore, we operate a global network of 4 ISO-accredited laboratories that use cutting-edge technology for the analysis of allergens and mycotoxins and can function to serve as an extension of your onsite labs.

Contact Romer Labs for more information on any of our innovative testing solutions or services. We are proud to offer solutions that are cost-effective, easy-to-use, and overall SIMPLY ACCURATE. www.romerlabs.com.

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RQA, Inc. **624**
10608 163rd Place
Orland Park, IL 60467
Phone: +1 630.512.0011
www.rqa-inc.com

Founded in 1989, RQA, Inc. provides world class services to the food, beverage, personal care and consumer product industries. Whether you need to assess your product quality and market conditions at retail where the consumer makes their purchase decision, retrieve consumer complaint or competitive product samples, optimize your Crisis Management plan, or even execute a product recall, RQA is there.

Safe Foods Corporation **145**
1501 E. 18th St.
North Little Rock, AR 72116
Phone: +1 501.803.8899
www.safefoods.net

Safe Foods exists to ensure a safer food supply for the world. We partner with food processors across the globe to reduce foodborne pathogens, meet regulatory requirements, and extend shelf life. We keep food safe with a range of products and services such as: processing aids, smart equipment, analytics software, consulting and more. To achieve our mission, Safe Foods employs a unique combination of knowledge, service, and solutions. Safe Foods makes food safety simple.

Sage Media **1003**
4500 S Monaco St., Unit 821
Denver, CO 80237
Phone: +1 713.398.9704
https://sage.media/

Most food-safety training fails to address the “people side” of culture. Sage Media creates custom learning programs driven by cinematic films that improve food safety culture so companies have fewer recalls, better employees, and higher profits.

- Our approach to designing behavior-based learning programs hinges on an understanding of emotional and motivational drivers that are rarely accessed within traditional learning environments.
- Your customized training film will speak directly to your audience, based on their needs and culture.
- Your program will be action-based, with a focus on measurable behaviors that demonstrate your organization’s commitment to being a leader in food safety culture.

SGS **725**
201 Route 17 North
Rutherford, NJ 07070
Phone: +1 973.461.1498
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. **324**
161 Compass Point Court
St. Charles, MO 63301
Phone: +1 606.393.0949
www.shoecovermagic.com

Shoe Cover Magic, Inc. provides a unique PPE solution that will fit your specific shoe cover needs. We are the North American Master Distributor for a shoe cover system that includes a hands-free automatic shoe cover dispenser and shoe cover remover. Our unique system provides SAFER, FASTER and CLEANER options to using shoe covers.

Our Shoe Cover System addresses four critical areas associated with the use of shoe covers:

1) SAFETY – Reduces slip/fall accidents associated with applying shoe covers.
2) COMPLIANCE – Increases employee compliance by making the process easier.
3) INCREASED PRODUCTIVITY – Improves throughput by eliminating wasted minutes for increasedproductivity.
4) REDUCE CROSS-CONTAMINATION – Reduces cross-contamination by using a hands-free approach.

Smart Food Safe **1105**
455 BD Fenelon, Suite 311
Dorval, QC H9S 5T8, Canada
Phone: +1 514.446.4400
https://smartfoodsafe.com

Smart Food Safe, a Food Safety Management software company, was founded to solve the growing global food safety, quality, traceability, and regulatory compliance requirements in the supply chain. Our smart cloud-based software modules are designed by the food industry professionals to digitalize the supply chain data for real-time traceability and comply with various global food safety and quality systems. Our 15 different affordable software modules help reduce cost by bringing food safety compliance, operational efficiencies and digital transparency for the stakeholders for effective decision making while also providing a positive return on investment.

SmartSense by Digi **1119**
186 Lincoln St., 9th Floor
Boston, MA 02111
Phone: +1 866.806.2653
www.smartsense.com

SmartSense’s proven solutions help your team to unlock the power of your data with digital decisioning that improves food safety procedures, reduces inventory loss, and ensures HACCP compliance.

Our customer-proven solutions monitor critical assets at more than 80,000 customer sites. We support some of the most recognizable names in the industries of food service, retail grocery and healthcare including Giant Eagle, Walmart, and Darden International. Our customer-first approach ensures every solution, from program implementation through ongoing support, is flexibly scaled to each company’s unique needs, equipping business leaders to make data-driven decisions that translate into meaningful ROI.

SnapDNA **433**
2095 W 6th Ave., Suite 100
Broomfield, CO 80020
Phone: +1 443.625.8166
www.snapdna.com

SnapDNA TrueRapid™ is the industry’s fastest molecular pathogen test. SnapDNA provides molecular analysis in 60 minutes, total time-to-result. Our automated system eliminates the need to culture

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bacteria, enabling on-site analysis without a lab – it can be used almost anywhere, by anyone. SnapDNA's TrueRapid™ is the first test to meet every key industry metric to replace lab-based tests. The SnapDNA system detects and analyzes only live pathogen cells from industry standard sample sizes and provides quantitative results with near-zero false positive accuracy. SnapDNA is poised to deliver the next generation of analytical tools for food safety.

SPEX **519**
7212 ACC Blvd.
Raleigh, NC 27617-7212
Phone: +1 919.789.3000
https://www.spex.com

We provide high quality innovative sample preparation equipment, certified reference materials, microbiology standards, and supplies for a diverse range of analytical techniques including PCR, chromatography and spectroscopy. Our portfolio enables scientists to prepare, calibrate, and analyze samples.

Our new proficiency testing program meets the needs of testing laboratories worldwide. Find all your testing needs at spex.com. Look for us at Booth# 519.

SPRINGER NATURE **1103**
One New York Plaza, Suite 4500
New York, NY 10004

Springer is a leading global scientific, technical and medical publisher, providing researchers with quality content in Food Sciences. With one of the strongest STM and HSS eBook collections and archives, as well as a comprehensive range of hybrid and open access journals, Springer is part of Springer Nature, a global publisher that serves and supports the research community. Springer Nature aims to advance discovery by publishing robust and insightful science, supporting the development of new areas of research and making ideas and knowledge accessible around the world.

StateFoodSafety **1118**
711 Timpanogos Pkwy., Bldg. M, Suite 3200
Orem, UT 84097
Phone: +1 801.494.1416
www.statefoodsafety.com

At StateFoodSafety, we care about food safety culture as much as you do. We offer the most effective training, the most powerful technology platform, and the most dedicated service. Our courses feature animated avatars, and simulation-based interactivities, which promote retention and help the learner achieve deeper levels of understanding. Our courses use real-life examples and anecdotes to awaken the learner to the real consequences of unsafe food handling and ultimately change the way they think and act toward food safety.

Our Food Safety Programs:

- Food Handler Training
- Food Manager Training and Certification Exam
- Alcohol Server/Seller Certification
- Food Allergens Training

SteraMist by TOMI **1101**
8430 Spires Way, Suite N
Frederick, MD 21701
Phone: +1 301.732.4278
www.tomimist.com

SteraMist delivers disinfection suitable for everything from food contact surfaces to direct food application. Incorporate SteraMist technology and products into any food production facility to increase disinfection rate and ensure customer and employee protection against dangerous pathogens. SteraMist disinfection is gentle and can be used for electronics and machines, eliminating the need to remove such items before disinfection, and allowing business and factories to get back to production faster. With a growing population to feed and strict standards to meet, SteraMist quickly disinfects with no residue and unmatched scalability to help you focus on delivering quality and protected food. Learn more today! info@tomimist.com – +1 800.525.1698.

Sterilex **404**
111 Lake Front Dr.
Hunt Valley, MD 21030
Phone: +1 443.541.8800
www.sterilex.com

Sterilex is a total food safety solution provided and is committed to providing solutions for pathogen control from farm to fork. As a recognized leader in developing antimicrobial, anti-biofilm and decontamination products for the food processing, animal health and water treatment industries, 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. To learn more, visit www.sterilex.com.

TandD US, LLC **335**
534 N. Guadalupe St., #32886
Santa Fe, NM 87501
Phone: +1 518.669.9227
www.tandd.com

TandD Corporation manufactures a comprehensive line of wireless and stand-alone Data Loggers with innovative web-based data collection, remote monitoring and notification features. Included in the product lineup are models that incorporate Bluetooth interfaces, for direct connection with Smartphones and Tablets, and Wi-Fi connectivity for automatic uploading of data to the company's free WebStorage Service, where customers can view, share and archive their recorded data without paying monthly fees. As the world's leading supplier of wireless data loggers, TandD has been engaged in the design, development and manufacture of high reliability, high quality electronic measurement systems since 1986.

Tatua USA **1115**
3800 Sierra Circle, Suite 205
Center Valley, PA 18034
Phone: +1 484.954.3800
www.tatua.com

Tatua is a leading producer and global supplier of dairy and plant-based peptones for microbial and cell nutrition.

Tentamus North America **131**
860 Greenview Dr.
Grand Prairie, TX 75050
Phone: +1 972.336.0336
https://www.tentamus.com

The Tentamus Group serves the Food, Feed, Agriculture, Cosmetics, and Dietary Supplement industries. Represented by Analytical Food Laboratories, Columbia Laboratories, Symbiotic Research and Tentamus North America Virginia, we support our customers with complete analytics and innovative solutions that meet national requirements for quality and safety control.

Combining our expertise in Microbiology, Chemistry, Regulatory Affairs and Consulting Services, Tentamus North America is your partner and one-stop-shop for standard and tailored product safety solutions. From your first conceptual product to the shelves of the largest retailers, we are there with you to support your growing busi-

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Thermo Fisher Scientific **109**
12076 Santa Fe Trail Dr.
Lenexa, KS 66215
Phone: +1 800.255.6730
www.thermofisher.com

Thermo Fisher Scientific is the world leader in serving science. Our mission is to enable our customers to make the world healthier, cleaner and safer. We believe we are uniquely positioned to help the food industry effectively protect consumers, brand and reputation by delivering simpler, faster and smarter solutions. Positioned to meet your changing needs, we can help you to remain adaptive, responsive, and competitive. To find out more, visit thermofisher.com/blog/food/ or join our blog at www.thermofisher.com/examiningfood, a forum for information, discussion and analysis of some of the issues faced in the food industry today.

University of Georgia **926**
300 Carlton St.
Athens, GA 30602
Phone: +1 706.542.0712
https://nchfp.uga.edu

The National Center for Home Food Preservation – University of Georgia is the source for current research-based recommendations for most methods of home food preservation. The Center was established with funding from the Cooperative State Research, Education- and Extension Service, U.S. Department of Agriculture (CSREES-USDA) to address food safety concerns for those who practice and teach home food preservation and processing methods.

Vitsab International AB **301**
16 Randall Road
Winslow, ME 04901
Phone: +1 207.210.1753
www.vitsab.com

Vitsab International AB/Freshtag™, booth 301, an R&D company working with regulators, academia, and industry to engineer Time Temperature Indicators (TTIs) aligned with regulations or specific temperature profiles. Experiencing a large increase in direct shipments of perishable products driven by Covid has everyone concerned for “The Last Mile.” Regulators and consumers are looking for simple validation of proper temperature handling from source to plate. Freshtag™ is this simple confirmation. Come see educational videos, our “Try Me Station” – activate and receive your own Freshtag™ and experience our exclusive “Stop Light” color changing technology, plus see examples of applications already in use.

Weber Scientific **1006**
2732 Kuser Road
Hamilton, NJ 08691
Phone: +1 609.306.5032
www.weberscientific.com

Weber Scientific is a diversified laboratory supplier providing both equipment and consumables throughout North America. We focus on the specialized testing needs of the food and beverage industry and promote quality control by making the acquisition of testing supplies both easy and affordable. On display you’ll find many innovative products including the Kikkoman Lumitester Smart ATP Sanitation System, MegaSamplers, Peel Plate microbial tests, a variety of allergen test kit options and so, so much more! Even those hard to source items such as serological pipets, pipet tips, petri dishes and gloves, are in stock and ready to ship. Stop by our booth and say hello! Our staff is ready to support you with your quality needs.

Whirl-Pak® **1113**
4916 East Broadway
Madison, WI 53716
Phone: +1 920.207.5299
https://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 **516**
P.O. Box 947
Bothell, WA 98041
Phone: +1 425.242.4153
www.worldbioproducts.com

World Bioproducts provides innovative environmental sample collection devices and convenient pre-filled dilution blanks and media. The EZ Reach™ Sponge Sampler, SampleRight™ Sponge Sampler, and PUR-Blue™ Swab Sampler are designed to address the specific challenges of recovering microorganisms from the food processing environment. All are available with our proprietary HiCap™ Neutralizing Broth, proven to more effectively neutralize residual sanitizers than other collection solutions, allowing for better recovery and detection of microorganisms from surfaces.

Zee Company **917**
412 Georgia Ave., Suite 300
Chattanooga, TN 37403
Phone: +1 888.484.6248
www.vincitgroup.com

Zee Company leads the industry in intervention chemical programs – the most important procedure for ensuring food protection. Furthermore, our entire catalog of over 1,200 unique chemical products is tailored to provide the strongest chemical food safety resource in the country.

Our products are administered by a highly trained sales team that specializes in active involvement in our partners’ businesses, offering safety and process improvements on a regular basis, comprising the most effective chemical option on the market.

IAFP 2023 Call for Submissions Deadlines

October 4, 2022 – Symposium Roundtable and Workshop Submissions
January 17, 2023 – Technical and Poster Abstract Submissions

Questions regarding submissions can be directed to Tamara Ford

Phone: +1 515.276.3344

Email: tford@foodprotection.org

Policy on Commercialism
for Annual Meeting Presentations

1. INTRODUCTION

No printed media, technical sessions, symposia, posters, seminars, short courses, and/or other related types of forums and discussions offered under the auspices of the International Association for Food Protection (hereafter referred to as to Association forums) are to be used as platforms for commercial sales or presentations by authors and/or presenters (hereafter referred to as authors) without the express permission of the staff or Executive Board. The Association enforces this policy in order to restrict commercialism in technical manuscripts, graphics, oral presentations, poster presentations, panel discussions, symposia papers, and all other type submissions and presentations (here-after referred to as submissions and presentations), so that scientific merit is not diluted by proprietary secrecy.

Excessive use of brand names, product names or logos, failure to substantiate performance claims, and failure to objectively discuss alternative methods, processes, and equipment are indicators of sales pitches. Restricting commercialism benefits both the authors and recipients of submissions and presentations.

This policy has been written to serve as the basis for identifying commercialism in submissions and presentations prepared for the Association forums.

2. TECHNICAL CONTENT OF SUBMISSIONS AND PRESENTATIONS

2.1 Original Work

The presentation of new technical information is to be encouraged. In addition to the commercialism evaluation, all submissions and presentations will be individually evaluated by the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convenor, and/or staff on the basis of originality before inclusion in the program.

2.2 Substantiating Data

Submissions and presentations should present technical conclusions derived from technical data. If products or services are described, all reported capabilities, features or benefits, and performance parameters must be substantiated by data or by an acceptable explanation as to why the data are unavailable (e.g., incomplete, not collected, etc.) and, if it will become available, when. The explanation for unavailable data will be considered by the Program Committee chairperson and/or technical reviewers selected by the Program Committee chairperson to ascertain if the presentation is acceptable without the data. Serious consideration should be given to withholding submissions and presentations until the data are available, as only those conclusions that might be reasonably drawn from the data may be presented. Claims of benefit and/or technical conclusions not supported by the presented data are prohibited.

2.3 Trade Names

Excessive use of brand names, product names, trade names, and/or trademarks is forbidden. A general guideline is to use proprietary names once and thereafter to use generic descriptors or neutral designations. Where this would make the submission or presentation significantly more difficult to understand, the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convenor, and/or staff, will judge whether the use of trade names, etc., is necessary and acceptable.

2.4 "Industry Practice" Statements

It may be useful to report the extent of application of technologies, products, or services; however, such statements should review the extent of application of all generically similar technologies, products, or services in the field. Specific commercial installations may be cited to the extent that their data are discussed in the submission or presentation.

2.5 Ranking

Although general comparisons of products and services are prohibited, specific generic comparisons that are substantiated by the reported data are allowed.

2.6 Proprietary Information (See also 2.2.)

Some information about products or services may not be publishable because it is proprietary to the author's agency or company or to the user. However, the scientific principles and validation of performance parameters must be described for such products or services. Conclusions and/or comparisons may be made only on the basis of reported data.

2.7 Capabilities

Discussion of corporate capabilities or experiences are prohibited unless they pertain to the specific presented data.

3. GRAPHICS

3.1 Purpose

Slides, photographs, videos, illustrations, art work, and any other type visual aids appearing with the printed text in submissions or used in presentations (hereafter referred to as graphics) should be included only to clarify technical points. Graphics which primarily promote a product or service will not be allowed. (See also 4.6.)

3.2 Source

Graphics should relate specifically to the technical presentation. General graphics regularly shown in, or intended for, sales presentations cannot be used.

3.3 Company Identification

Names or logos of agencies or companies supplying goods or services must not be the focal point of the slide. Names or logos may be shown on each slide so long as they are not distracting from the overall presentation.

3.4 Copies

Graphics that are not included in the preprint may be shown during the presentation only if they have been reviewed in advance by the Program Committee chairperson, session convenor, and/or staff, and have been determined to comply with this policy. Copies of these additional graphics must be available from the author on request by individual attendees. It is the responsibility of the session convenor to verify that all graphics to be shown have been cleared by Program Committee chairperson, session convenor, staff, or other reviewers designated by the Program Committee chairperson.

4. INTERPRETATION AND ENFORCEMENT

4.1 Distribution

This policy will be sent to all authors of submissions and presentations in the Association forums.

4.2 Assessment Process

Reviewers of submissions and presentations will accept only those that comply with this policy. Drafts of submissions and presentations will be reviewed for commercialism concurrently by both staff and technical reviewers selected by the Program Committee chairperson. All reviewer comments shall be sent to and coordinated by either the Program Committee chairperson or the designated staff. If any submissions are found to violate this policy, authors will be informed and invited to resubmit their materials in revised form before the designated deadline.

4.3 Author Awareness

In addition to receiving a printed copy of this policy, all authors presenting in a forum will be reminded of this policy by the Program Committee chairperson, their session convenor, or the staff, whichever is appropriate.

4.4 Monitoring

Session convenors are responsible for ensuring that presentations comply with this policy. If it is determined by the session convenor that a violation or violations have occurred or are occurring, he or she will publicly request that the author immediately discontinue any and all presentations (oral, visual, audio, etc.) and will notify the Program Committee chairperson and staff of the action taken.

4.5 Enforcement

While technical reviewers, session convenors, and/or staff may all check submissions and presentations for commercialism, ultimately it is the responsibility of the Program Committee chairperson to enforce this policy through the session convenors and staff.

4.6 Penalties

If the author of a submission or presentation violates this policy, the Program Committee chairperson will notify the author and the author's agency or company of the violation in writing. If an additional violation or violations occur after a written warning has been issued to an author and his agency or company, the Association reserves the right to ban the author and the author's agency or company from making presentations in the Association forums for a period of up to two (2) years following the violation or violations.

2022 WORKSHOPS

Friday, July 29 (1:00 p.m. – 5:00 p.m.) and Saturday, July 30 (8:30 a.m. – 5:00 p.m.)

Workshop 1 – Next Generation Sequencing: A Tutorial and Hands-On Workshop to Help Understand This Emerging Technology

Next Generation Sequencing (NGS) has taken the front stage as a tool to understand the environment around us. It is being used globally to track outbreak strains of bacteria, monitor microbial communities and understand changes in populations of organisms based on temporal and forced stimuli. NGS is more complex than past methodologies (such as PFGE) and has more components that need to be understood. What is NGS? How do I perform an experiment? How do I analyze my data? What does the data mean? What is metagenomics and how can I analyze a metagenomic data set? And what does Precision Genomics mean? This workshop seeks to shed light on these questions so that the student will have a more holistic view of the applications of NGS. We will provide sessions on technology, data analysis and data interpretation that the FDA, CORE, Compliance and CDC, employ for outbreak investigations and regulatory decision-making. Each attendee will be analyzing whole genome sequencing and metagenomic datasets to perform quality control, assemble, build phylogenetic trees, and identify genes of interest (such as AMR, virulence and stress response genes) utilizing open source tools such as GalaxyTrakr, Pathogen Detection Website and the Center for Genomic Epidemiology Database. Upon return from the workshop the knowledge gained and the tools learned can be implemented for data analysis in your lab.

Workshop Instructors

Maria Balkey, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA
Laura Gieraltowski, CDC, Atlanta, GA, USA
Julie Haendiges, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA
Leslie Hintz, U.S. Food and Drug Administration, College Park, MD, USA
Maria Hoffmann, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA
Bill Klimke, NCBI, Washington, D.C., USA
Padmini Ramachandran, U.S. Food and Drug Administration, Laurel, MD, USA
Eric Stevens, U.S. Food and Drug Administration, College Park, MD, USA

Workshop Organizers

Maria Hoffmann, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA
Eric Stevens, U.S. Food and Drug Administration, College Park, MD, USA

Saturday, July 30 (8:30 a.m. – 5:00 p.m.)

Workshop 2 – Microbiological Sampling and Testing: ICMSF Workshop for Risk Managers and Food Business Operators

The workshop introduces the principles and practices of microbiological sampling and testing for food safety and quality assessment in the context of the verification of process control and food lot acceptance.

The set-up of the workshop is designed to provide the bigger picture of the roles of food business operators and competent authorities in food safety assurance, drilling down to the purpose and best practices concerning microbiological monitoring.

The workshop is relevant for most food professionals attending the IAFP Annual Meeting: regulatory, industry, academia, developing professionals, students; all need a good understanding of the key role that microbiological criteria have in regulatory standards and operational management and of the tools available to work with them.

The statistics underlying useful sampling and testing will be shared and practiced with participants. Participants are requested to bring their own laptops to the workshop (working in groups of two, one laptop could suffice per two participants, Excel is needed).

Participants will learn about useful microbiological testing in the context of different types of food commodities as well as international and national food safety standards. They will be able to practice using the ICMSF statistical sampling plan tool for designing and assessing the performance of microbiological sampling plans.

The information provided in the workshop and the 'hands-on' learning of the participants is expected to help them to develop or assess microbiological monitoring programs of food business operators, which are critical tools for controlling food safety and quality in day-to-day food business operations.

Workshop Instructors and Organizers

Leon Gorris, Food Safety Expert, Nijmegen, The Netherlands
Marcel Zwietering, Wageningen University, Wageningen, The Netherlands

2022 WORKSHOPS

Saturday, July 30 (8:30 a.m. – 5:00 p.m.)

Workshop 3 – Mold Contamination in Foods and Food Production Facilities – Monitoring, Sampling, Testing, and Identification Techniques

Mold contamination in food products can cause both food safety problems and food spoilage. For example, airborne mold spores that fall onto products prior to packaging may cause food spoilage and mycotoxin contamination. Damp storage condition is often the cause of product damage. Proper monitoring and sampling of fungal contamination in food production and storage facilities can provide insight into contamination risk and alert for actions. Air quality sampling in a food production facility is an integral part of the environmental monitoring plan, yet many food companies are not familiar with the proper ways to conduct air quality monitoring. This one-day workshop will introduce the basics of fungal ecology and indoor contamination, share air quality monitoring and investigation protocols, demonstrate proper sampling techniques, elucidate fungal spoilage investigation methods including culture-based methods, DNA sequencing, and metagenomics and their applications in mold spoilage investigation. The workshop will incorporate insightful case studies and discussions led by an expert in indoor mold investigation and an experienced food and environmental mycologist.

Workshop Instructors

Tim Kirk, Alvista Environmental Consulting, Inc., Pleasanton, CA, USA
Florence Wu, AEMTEK, Inc., Fremont, CA, USA

Workshop Organizer

Florence Wu, AEMTEK, Inc., Fremont, CA, USA

Saturday, July 30 (8:30 a.m. – 5:00 p.m.)

Workshop 4 – Use and Interpretation of the USDA-ARS-Predictive Microbiology Information Portal, Pathogen Modeling Program (PMP) and Combase

Eleven new predictive models have recently been added to the USDA-ARS-Pathogen Modeling Program (PMP). Last year, USDA-ARS assumed the responsibility for supporting ComBase, and building the platform for its continued success. Accordingly, this workshop will give a hands-on update on the PMP and ComBase, a user-friendly interface to quickly retrieve microbial data for addressing their food safety needs. As a first step, the presenter will give an overview of predictive modeling, and would cover topics, such as classes of microbial models, including discussion on underlying principles of modeling as well as the use and interpretation of the predictive models. Attendees will learn the most important microbiological safety issues facing the food industry on a global scale, enhance and update knowledge of predictive microbiology, and learn to use the PMP and ComBase. The attendees will understand how to locate and retrieve regulatory information as well as the predictive model that is applicable to a food product of their interest and the pathogen of concern.

Specifically, the workshop will describe and demonstrate how the USDA-ARS-PMP and ComBase can be used to predict accurate estimates on growth, survival, and lethal effects of processing environments on foodborne pathogens; and how to determine compliance with regulatory performance standards. Participants will be able to predict the outcome of a process, e.g., the number of log reduction, resulting from the processing conditions, e.g., residence time and temperature, and to predict for untested conditions. Case studies demonstrating their application will be an integral part of the workshop. By participating in this workshop, attendees will get familiar with the recent developments as well as will get a better understanding of how to use ARS modeling programs and ComBase to enhance the safety of our food supply. All participants would need to bring their laptops to obtain hands-on experience and training for proper use of the software programs. The workshop will close with an evaluation sheet to obtain feedback from attendees.

Workshop Instructors

Vijay Juneja, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
Subash Shrestha, Cargill, Wichita, KS, USA

Workshop Organizer

Vijay Juneja, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

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1942 – Frederick W. Fabian
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1946 – Russell R. Palmer
1947 – R. G. Ross
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1994 – Harold Bengsch
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1998 – Gale Prince
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2012 – Isabel Walls
2013 – Katherine M.J. Swanson
2014 – Donald W. Schaffner
2015 – Donald L. Zink
2016 – Alejandro S. Mazzotta
2017 – Linda J. Harris
2018 – Mickey E. Parish
2019 - Timothy C. Jackson
2020 - Kalmia E. Kniel
2021 - Roger L. Cook

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

FUTURE ANNUAL MEETINGS

July 16–19, 2023
Metro Toronto Convention Centre
Toronto, Ontario, Canada

July 14–17, 2024
Long Beach Convention Center
Long Beach, California

July 27–30, 2025
Huntington Convention Center
Cleveland, Ohio

Latin American Congress of Foods: A Look into Food Systems

14th International Congress of Food Science and Technology – CONACTA 2022

22th Latin American and Caribbean Congress of Food Science and Technology - ALACCTA

8th Latin-American Symposium on Food Safety - IAFP

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Congratulations to the Recipients of the 2022 *Journal of Food Protection*® Awards

2022 John N. Sofos Most-Cited *JFP* Research and Review Publication Awards

These awards were established to recognize top researchers and high-quality research publications and reviews that contribute to the impact of *JFP* and the field of food safety. The awards are based upon the number of citations of a work by others for papers published five years prior.

Most-Cited Research Publication Award

1st Place

Inactivation of Yeast on Grapes by Plasma-Activated Water and Its Effects on Quality Attributes

Jian Guo, Kang Huang, Xiao Wang, Chenang Lyu, Nannan Yang, Yanbin Li, and Jianping Wang

Published February 2017

2nd Place

Quantitative Microbial Risk Assessment for *Escherichia coli* O157:H7 in Fresh-cut Lettuce

Hao Pang, Elisabetta Lambertini, Robert L. Buchanan, Donald W. Schaffner, and Abani K. Pradhan

Published February 2017

3rd Place

Canadian Consumer Food Safety Practices and Knowledge: Foodbook Study

Regan Murray, Shiona Glass-Kaastra, Christine Gardhouse, Barbara Marshall, Nadia Ciampa, Kristyn Franklin, Matt Hurst, M. Kate Thomas, and Andrea Nesbitt

Published October 2017

Most-Cited General Interest Publication Award

1st Place

Guidelines to Validate Control of Cross-Contamination during Washing of Fresh-Cut Leafy Vegetables

D. Gombas, Y. Luo, J. Brennan, G. Shergill, R. Petran, R. Walsh, H. Hau, K. Khurana, B. Zomorodi, J. Rosen, R. Varley, and K. Deng

Published February 2017

2022 *Journal of Food Protection* Most-Downloaded Publication Award

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1st Place

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

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

Published March 2019

The awards will be held for presentation at the IAFP 2022 Editorial Reception in Pittsburgh, PA.

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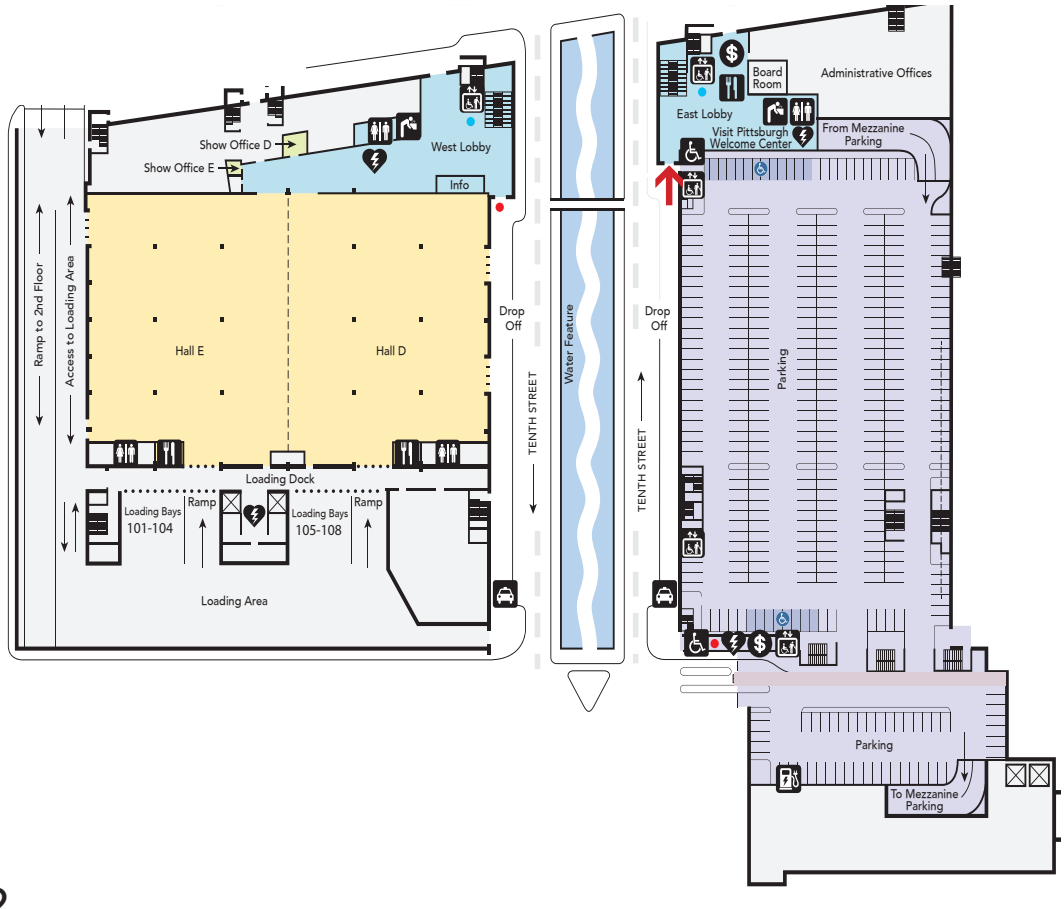
PITTSBURGH CONVENTION CENTER FLOOR PLANS

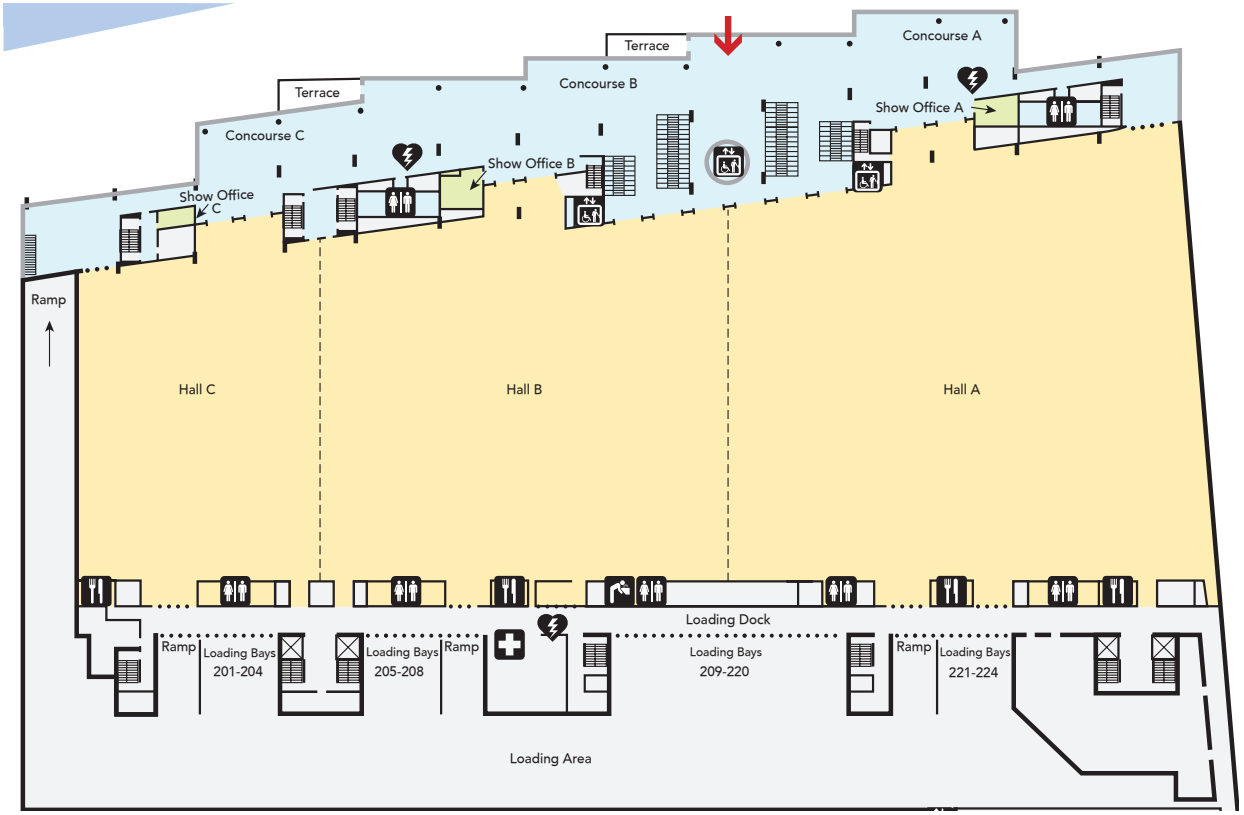
Level 1

Enter building through the East Lobby



Level 2

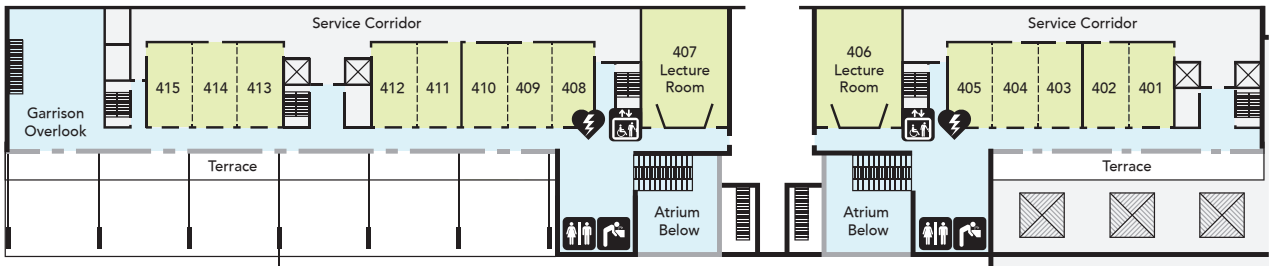
IAFP Registration



PITTSBURGH CONVENTION CENTER FLOOR PLANS

Level 3

Level 4



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