



# IAFP 2013 Program Book

Charlotte Convention Center



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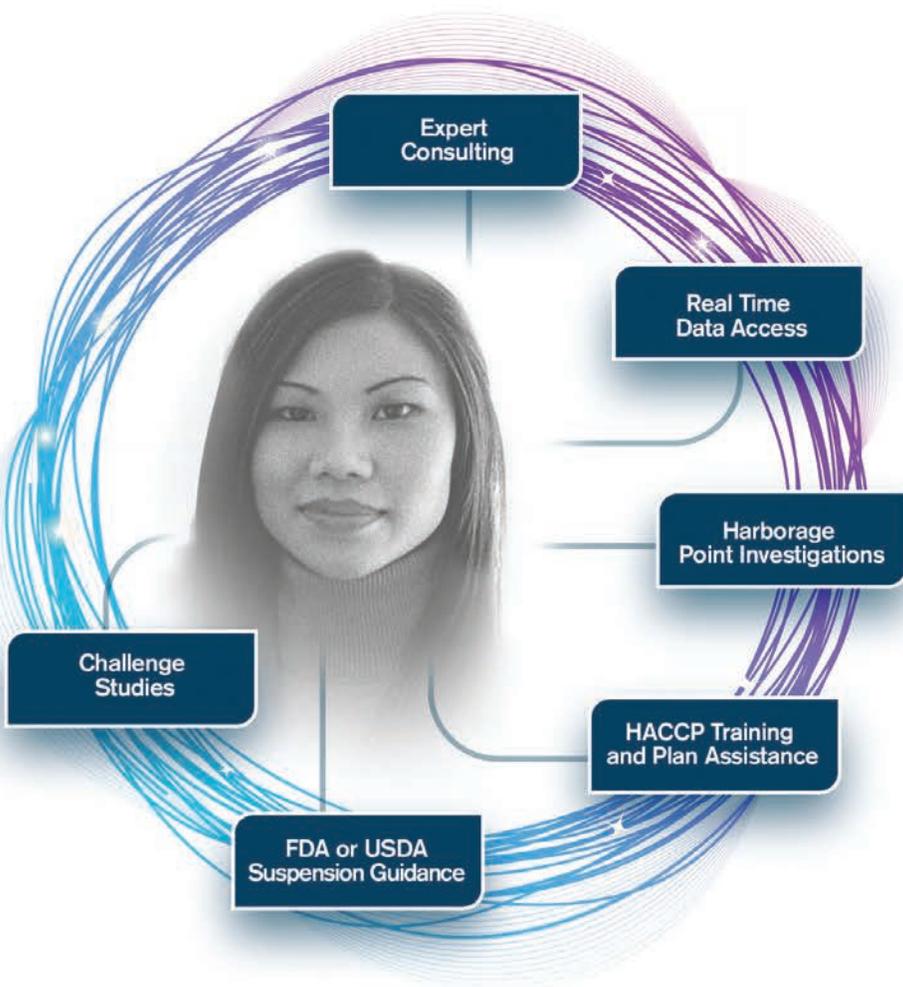
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# SCHEDULE-AT-A-GLANCE

Room	Ballroom A	Ballroom B	217A	217BC	217D	213A	218-219	213BC	213D	Exhibit Hall
<b>Sunday</b> 6:00 p.m.-7:30 p.m.										
<b>Monday</b> 8:30 a.m.-12:00 p.m.	<b>S1</b> Fresh Produce: Are Current GAPS Recommendations Sufficient for Food Safety?	<b>S2</b> Foodborne Outbreaks - Domestic and International: What are We Learning?	<b>S3</b> Getting the Word Out for a Safe Food Supply	<b>S4</b> Chemical Risk Assessment: 101: A Better Understanding of a Complex Subject Made Easier <b>S5</b> Persistent and Ongoing Food Allergen Challenges: Labeling, Detection and Control	<b>S6</b> Linking Pests and Pathogens of Food Safety <b>S7</b> Culture Independent Diagnostics	<b>S8</b> From Grapes to the Glass: Food Safety Issues That Affect Wine throughout the Production Chain <b>S9</b> Food Safety Education: The Value of Education and Outreach to Advancing the Future Food Safety Leaders	<b>RT1</b> Food Safety Links in Cross Border Health Initiatives between the U.S., Canada and Mexico	<b>T1</b> Technical Session - Meat and Poultry	<b>T2</b> Technical Session - Communication Outreach and Education, Sanitation, Seafood	<b>P1</b> Poster Session - Risk Assessment, Food Toxicology, Beverages and Water, Meat and Poultry, Dairy and Other Food Commodities, Food Defense, Communication Outreach and Education, Non-microbial Food Safety, General Microbiology, Epidemiology, Microbial Food Spoilage, Sanitation 10:00 a.m. - 6:00 p.m.
<b>Monday</b> 1:30 p.m.-5:00 p.m.	<b>S10</b> The USDA-NIFA Food Collaborative (NoCoCORE): A Model for an Integrated, Multidisciplinary Approach to Addressing the Leading Cause of Foodborne Disease	<b>S11</b> Molecular Methods for Advancing Food Safety <b>S12</b> The Application of Bioinformatic Analyses in Foodborne Pathogen Characterization	<b>S13</b> Sanitation Stories: Tall But True <b>S14</b> Ecology of Campylobacter and Salmonella in Pasture Poultry/Mixed Farm and Their Control with Natural Organic Antimicrobials	<b>S15</b> Where the Wild Things are: The Safety of the Food Supply	<b>S16</b> Antimicrobial Resistance and Food Safety in the 21st Century	<b>RT3</b> Current Controversies in Food Safety	<b>RT2</b> China Food Safety: Needs, Challenges and Approaches	<b>T3</b> Technical Session - Antimicrobials, General Microbiology, Meat and Poultry	<b>T4</b> Technical Session - Applied Laboratory Methods, Food Defense, Novel Laboratory Methods	
<b>Tuesday</b> 8:30 a.m.-12:00 p.m.	<b>S17</b> Sanitation and Sanitary Design - A Holistic Approach	<b>S18</b> Emerging Technologies for Detection and Characterization of Foodborne Pathogens	<b>S19</b> U.S. Interagency Collaboration on Foodborne Illness Source Attribution <b>S20</b> Best Practices in Recall Management	<b>S21</b> Pathogen Environmental Sampling Plans - The Latest on What, How and Why	<b>S22</b> Food Safety in Paradise: Issues and Initiatives in the Caribbean <b>S23</b> The Pacific Rim: Food Safety Issues and Initiatives	<b>RT4</b> Careers in Food Safety: Traveling the Path of Those before Us <b>RT5</b> Codex Alimentarius at 50: Accomplishments and Challenges	<b>RT6</b> Benefits of Food Safety Beyond Saving Lives <b>RT7</b> Bridging Gaps Between Scientific Assessment of Risk and Public Perception	<b>T5</b> Technical Session - Risk Assessment	<b>T6</b> Technical Session - Produce	<b>P2</b> Poster Session - Pathogens, Antimicrobials 10:00 a.m. - 6:00 p.m.
<b>Tuesday</b> 1:30 p.m.-5:00 p.m.	<b>S24</b> Consumer Food Safety Behaviors: How to Change Them and How to Know When We've Done It	<b>S25</b> Global Lab Capacity Building for Ensuring Food Safety	<b>S26</b> Listeria monocytogenes in Retail Dells - Prevalence, Transmission and Control Strategies	<b>S27</b> Global Practices That Form a Multiple Hurdle Approach to Salmonella and Campylobacter Reductions in Poultry	<b>S28</b> Discussing Food Safety Risks, Controls and Challenges Associated with Farmers' Markets		<b>RT8</b> Validation of Process Control in a HACCP System: Practical Application <b>RT9</b> Microbial and Chemical Hazards in Yeast: Identification of Contributing Factors, Data Gaps and Solutions	<b>T7</b> Technical Session - Beverage and Water, Dairy, Non-microbial Food Safety, Risk Assessment	<b>T8</b> Technical Session - Pathogens, Produce	
<b>Wednesday</b> 8:30 a.m.-12:00 p.m.	<b>S29</b> Assessing the Safety of Water Used in the Production of Fresh and Minimally Processed Produce	<b>S30</b> The Next Risk Analysis Challenge: Linking HACCP and Risk Assessments	<b>S31</b> Farm to Fork Cantaloupe Risks and Interventions <b>S32</b> Food Safety Sampling, Risk Assessment and Regulatory Standards: Arbitrary or Science-Based?	<b>S33</b> Food Defense Revisited: What Do We Need to Know about Fraud, Counterfeiting and Tampering? <b>S34</b> Enhancing the Value of Restaurant Inspections to Drive Food Safety Improvements	<b>S35</b> Prevention and Control of Listeria monocytogenes Contamination of Cheese <b>S40</b> Making Traceability Work across the Entire supply Chain	<b>RT10</b> Changes in Academic Food Safety Microbiology Teaching Laboratories: Are We Throwing the Baby Out with the Bathwater? <b>RT11</b> Call to Action - Let's Put Water on a HACCP Plan	<b>T9</b> Technical Session - Epidemiology	<b>T10</b> Technical Session - Pathogens	<b>P3</b> Poster Session - Applied Laboratory Methods, Novel Laboratory Methods, Produce, Risk Assessment 9:00 a.m. - 3:00 p.m.	
<b>Wednesday</b> 1:30 p.m.-3:30 p.m.	<b>S36</b> Food Safety for Large Events: Lessons Learned from the Oquirrhos and Conventions	<b>S37</b> What is Dry Sanitation? What is Dry Cleaning?	<b>S38</b> Validation of Sanitation - Expectations and Approaches	<b>S39</b> From Cocoa Beans to Baking Chips, Candy Food Safety Issues That Affect Chocolate throughout the Global Production Chain	<b>S40</b> Making Traceability Work across the Entire supply Chain	<b>S41</b> Using the Food Emergency Response Network to Improve National Food Safety through Integration of Federal, State and Local Laboratories	<b>S42</b> Preserve This Novel Preservatives and Applications in Acid and Acidified Foods	<b>T11</b> Technical Session - Microbial Food Spoilage, Pathogens		
<b>Wednesday</b> 4:00 p.m.-5:00 p.m.										

John H. Shiliker Lecture - Ballroom A  
Food Safety Risk Management for a Multinational Company: Things I Wish I Knew before Taking the Job and Things I Have Learned along the Way!  
Dane Bernard

# WELCOME FROM THE EXECUTIVE BOARD



## **PRESIDENT**

Katherine M. J. Swanson  
KMJ Swanson Food Safety  
Eagan, MN, USA

On behalf of the Executive Board, we would like to welcome you to IAFP 2013 and to Charlotte, North Carolina. For the next few days, you will be joined by colleagues and friends from around the world to help fulfill the Association's mission: *To provide food safety professionals worldwide with a forum to exchange information on protecting the food supply.*

Food safety remains a top priority for consumers and food safety professionals. It is imperative that we stay in touch with current and emerging issues, the latest science, solutions to new and existing problems, and continue to network with our colleagues and developing scientists. IAFP 2013 will deliver on all of that by providing the forum to promote the association's goal of advancing food safety worldwide. This year's program is outstanding and we believe you will find this meeting to be one of our most informative. Prepare to be exposed to the latest revelations in food safety. Prepare to network with leading experts from around the world – often times the most valuable information is shared outside of the sessions! After attending IAFP 2013, we are sure you will be enlightened and invigorated in your role as part of the solution for tomorrow's food safety issues.

The Executive Board offers special thanks to Mary Lou Tortorello, Program Committee Chair, and the entire Committee for organizing an outstanding lineup of symposia, roundtables, technical presentations, posters and interactive sessions. There will be no shortage of information available – just time! Your greatest challenge will be determining where best to spend your time, so review the program carefully and plan your schedule.

The Board would also like to thank the volunteers from the Carolinas Association for Food Protection who have been gracious enough to help host the 2013 Annual Meeting. All of their hard work will make IAFP 2013 a memorable experience for all attendees.

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

So, whether you are a new Member, long-time Member, student Member or even a prospective Member, the Board eagerly welcomes you and encourages you to actively participate in this meeting.

Together, we are *Advancing Food Safety Worldwide*®!



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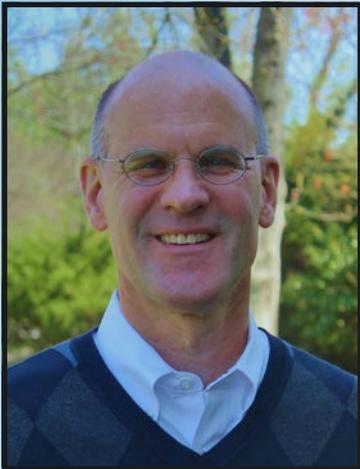
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# WELCOME FROM LOCAL ARRANGEMENTS



Stephen Tracey  
Food Safety Manager  
Delhaize America, Food Lion

## *Welcome to the Carolinas!*

**I**AFP 2013 in Charlotte is packed with great presentations on the changing world of food safety. The Local Arrangements Committee would like to make your stay as productive and pleasant as possible, and to that end, we would like to offer some suggestions for ways you can take in the sights of this exciting city. You many think of Charlotte as an important financial center, but Charlotte also provides many opportunities to enjoy the arts and entertainment within blocks of our meeting location. As soon as you leave your hotel or the convention center in “Uptown” Charlotte, you are just a few minutes from many of the following venues.

Charlotte truly has something for everyone. From the NASCAR Museum to the Mint, a world-class art museum, Charlotte will keep you busy. We also recommend the Harvey B. Gantt Center for African American Art and Culture, and The Bechtler Museum of Modern Art. If you have made this a family trip, Discovery Place and Charlotte Nature Museum are Science Learning Centers for the whole family. If you want to actually watch art being created, the McColl Center for Visual Art is a nationally acclaimed contemporary art center dedicated to connecting artists and their work with the community. The EPICENTER in uptown Charlotte has movie theaters, restaurants, bowling, and other night spots. There is no end to the shopping and dining in Charlotte.

If you're interested in squeezing some outdoor adventure into your stay, consider a visit to the US National Whitewater Center, a state-of-the-art facility along the Catawba River that offers a white water rafting course, bike trails, climbing walls, and team building/leadership opportunities. For a more low impact activity, we suggest exploring Charlotte's excellent system of pedestrian greenways and parks. For evening entertainment and music, the Knight Theater is just down the street from the convention center.

Please, visit us at the hospitality booth if you need any assistance or directions while you are here. Again, we want to welcome you to IAFP 2013 in Charlotte, and we hope you have a great time here in the Carolinas.

*Local Arrangements Committee  
Carolinas Association for Food Protection*



Angela M. Fraser  
Associate Professor/Food Safety Specialist  
Dept. of Food, Nutrition, and Packaging  
Sciences, Clemson University



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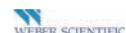
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*All events held at the Charlotte Convention Center*

## SATURDAY, JULY 27

**Committee and PDG Meetings** • 2:30 p.m. – 5:00 p.m.

**Welcome Reception** • 5:00 p.m. – 6:30 p.m. – *Sponsored by Eurofins Scientific*

## SUNDAY, JULY 28

**Affiliate Council Meeting** • 7:00 a.m. – 10:00 a.m.

**Committee and PDG Meetings** • 8:00 a.m. – 4:30 p.m.

**Student Luncheon** (ticket required) • 12:00 p.m. – 1:30 p.m.

**Editorial Board Reception** (by invitation) • 4:30 p.m. – 5:30 p.m. – *Sponsored by Roka Bioscience*

**Opening Session and Ivan Parkin Lecture** • 6:00 p.m. – 7:30 p.m.

**Cheese and Wine Reception** • 7:30 p.m. – 9:30 p.m. – *Sponsored by Kraft Foods and Silliker*

**Exhibit Hours** • 7:30 p.m. – 9:30 p.m.

## MONDAY, JULY 29

**Committee and PDG Chairperson Breakfast** (by invitation) • 7:00 a.m. – 9:00 a.m.

**Symposia & Technical Sessions** • 8:30 a.m. – 5:00 p.m.

**Exhibit Hours** • 10:00 a.m. – 6:00 p.m.

**Exhibit Hall Lunch** • 12:00 p.m. – 1:00 p.m. – *Sponsored by Sealed Air Corporation*

**North Carolina Research Campus Tour** • 1:00 p.m. – 5:00 p.m.

**Exhibit Hall Reception** • 5:00 p.m. – 6:00 p.m. – *Sponsored by DuPont Nutrition & Health*

## TUESDAY, JULY 30

**Symposia & Technical Sessions** • 8:30 a.m. – 5:00 p.m.

**Exhibit Hours** • 10:00 a.m. – 6:00 p.m.

**Exhibit Hall Lunch** • 12:00 p.m. – 1:00 p.m. – *Sponsored by Roka Bioscience*

**Business Meeting** • 12:15 p.m. – 1:00 p.m.

**Exhibit Hall Reception** • 5:00 p.m. – 6:00 p.m. – *Sponsored by 3M Food Safety*

**President's Reception** (by invitation) • 6:00 p.m. – 7:00 p.m.

**Past President's Dinner** • 7:00 p.m.

**Student Mixer** • 7:00 p.m. – 9:00 p.m.

## WEDNESDAY, JULY 31

**Symposia & Technical Sessions** • 8:30 a.m. – 3:30 p.m.

**Networking Lunch** • 12:00 p.m. – 1:00 p.m. – *Sponsored by Heinz*

**John H. Silliker Lecture** • 4:00 p.m. – 5:00 p.m.

**Awards Reception and Banquet** • 6:00 p.m. – 9:30 p.m.

## REGISTRATION HOURS

*Charlotte Convention Center*

**Saturday** – 12:00 p.m. – 7:00 p.m.

**Sunday** – 8:30 a.m. – 9:00 p.m.

**Monday** – 7:30 a.m. – 5:30 p.m.

**Tuesday** – 8:00 a.m. – 5:30 p.m.

**Wednesday** – 8:00 a.m. – 12:00 p.m.

# GENERAL INFORMATION

## Speaker-Ready Room

The Speaker-Ready Room is located in *Room 216A*, Charlotte Convention Center, and is available for speakers Sunday through Wednesday, 8:00 a.m. to 5:00 p.m.

## Press Release Postings

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

## Cell Phone Policy

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

## Recording Policy

Unauthorized video, still photography or audio recording will not be allowed. By attending the IAFP Annual Meeting, you authorize IAFP to take your picture and use it in our publications.

## Meeting App

The IAFP 2013 mobile app is available through the App Store, the Android market and through a web-based version. More information is available on the IAFP 2013 Web site.

Sponsored by 

## Internet Café

The Internet Café is available in *Concourse A* by IAFP Registration at the Charlotte Convention Center.

Sponsored by 

## WiFi Internet

Complimentary WiFi Internet is available on the meeting room level. To access:

Use the IAFP Network

Login = IAFP2013

Password = CHARLOTTE

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# PROGRAM COMMITTEE

## Chairperson

Mary Lou Tortorello, U.S. Food and Drug Administration

## Vice Chairperson

Eric Martin, Margaritaville Enterprises, LLC

## Members

Mindy Brashears, Texas Tech University

Jinru Chen, The University of Georgia

Dan Erickson, Harold Wainess & Associates

Paula Fedorka-Cray, U.S. Dept. of Agriculture-ARS-BEAR

Joshua Gurtler, U.S. Dept. of Agriculture-ARS

Ian Jenson, Meat & Livestock Australia

Alvin C.B. Lee, Institute for Food Safety and Health

Bradley Marks, Michigan State University

Mickey Parish, U.S. Food and Drug Administration

Michael Roberson, Publix Super Markets, Inc.

## Board Liasons

Katherine M.J. Swanson, KMJ Swanson Food Safety, Inc.

Donald Schaffner, Rutgers University

**A special thank you to Lorallyn Ledenbach for her time and effort in reviewing abstracts for the Program Committee.**

# COMMITTEE AND PDG SCHEDULE

*All attendees are encouraged to participate*

TIMES	MEETING	ROOM
<b>SATURDAY, JULY 27</b>		
2:30 PM – 5:00 PM	International Food Protection Issues PDG	Ballroom A
3:00 PM – 4:30 PM	Membership Committee	211A
3:30 PM – 4:30 PM	Past Presidents' Committee	211B
<b>SUNDAY, JULY 28</b>		
7:00 AM – 10:00 AM	Affiliate Council	217D
8:00 AM – 10:00 AM	Food Chemical Hazards and Food Allergy PDG	213A
8:00 AM – 10:00 AM	HACCP and Food Safety Systems – Organizational Meeting	211B
8:00 AM – 10:00 AM	Water Safety and Quality PDG	219A
8:00 AM – 5:00 PM	Committee on Control of Foodborne Illness	214
8:30 AM – 10:00 AM	New Media Task Force	219B
9:00 AM – 11:00 AM	Microbial Modelling and Risk Analysis PDG	213BC
9:00 AM – 11:00 AM	Seafood Safety and Quality PDG	218B
9:00 AM – 12:00 PM	Food Hygiene and Sanitation PDG	213D
10:00 AM – 12:00 PM	Applied Laboratory Methods PDG	217BC
10:00 AM – 12:00 PM	Food Defense PDG	219A
10:00 AM – 12:00 PM	<i>FPT</i> Management Committee	218A
10:00 AM – 12:00 PM	Food Safety Education PDG	213A
10:00 AM – 12:00 PM	Fruit and Vegetable Safety and Quality PDG	217A
11:00 AM – 12:00 PM	Constitution and Bylaws Committee	219B
12:00 PM – 1:30 PM	Student PDG	217D
1:00 PM – 3:00 PM	Food Packaging PDG	211B
1:00 PM – 3:00 PM	Meat and Poultry Safety and Quality PDG	217A
1:00 PM – 3:00 PM	Pre Harvest Food Safety PDG	213D
1:00 PM – 3:00 PM	Viral and Parasitic Foodborne Disease PDG	213BC
2:00 PM – 4:00 PM	3-A Committee on Sanitary Procedures	219B
2:00 PM – 4:00 PM	Beverage PDG	219A
2:00 PM – 4:00 PM	Developing Food Safety Professionals PDG	213A
2:00 PM – 4:00 PM	Food Law PDG	218B
2:00 PM – 4:00 PM	<i>JFP</i> Management Committee	218A
2:00 PM – 4:00 PM	Sanitary Equipment and Facility Design – Organizational Meeting	219B
2:00 PM – 5:00 PM	Dairy Quality and Safety PDG	217BC
3:00 PM – 5:00 PM	Low-Moisture Foods – Organizational Meeting	213BC
3:00 PM – 5:00 PM	Retail and Foodservice PDG	217A
4:00 PM – 5:00 PM	Nominating Committee	218B
<b>MONDAY, JULY 29</b>		
12:00 PM – 2:00 PM	Foundation Committee	211A

# EXHIBIT INFORMATION

## CHEESE AND WINE RECEPTION

Sunday, July 28 7:30 p.m. – 9:30 p.m.

Sponsored by  and 

## EXHIBIT HALL BREAKS

Monday, July 29 10:00 a.m. Pastries and Coffee

Sponsored by 

3:00 p.m. Coffee Break

Sponsored by 

Tuesday, July 30 10:00 a.m. Pastries and Coffee

Sponsored by 

3:00 p.m. Coffee Break

Sponsored by 

## EXHIBIT HALL LUNCH

Monday, July 29 12:00 p.m. – 1:00 p.m.

Sponsored by   

Tuesday, July 30 12:00 p.m. – 1:00 p.m.

Sponsored by 

## EXHIBIT HALL RECEPTIONS

Monday, July 29 5:00 p.m. – 6:00 p.m.

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Tuesday, July 30 5:00 p.m. – 6:00 p.m.

Sponsored by 

## BREAKS

Wednesday July 31 10:00 a.m. Pastries and Coffee

Sponsored by    
 MANAGING RISK

3:00 p.m. Coffee Break

Sponsored by 

## NETWORKING LUNCH

Wednesday, July 31 12:00 p.m. – 1:00 p.m.

Sponsored by 

Located in Hall A

## 20-Year Exhibitors

3-A Sanitary Standards, Inc.  
3M Food Safety  
Advanced Instruments, Inc.  
BioControl Systems, Inc.  
bioMérieux, Inc.

Charm Sciences  
Ecolab  
Michelson Laboratories  
Nelson-Jameson  
Q Laboratories, Inc.

rtech laboratories  
Silliker, Inc.  
Thermo Scientific  
Weber Scientific  
WHIRL-PAK

## 10-Year Exhibitors

American Proficiency Institute  
ASI Food Safety Consultants  
Bio-Rad Laboratories  
Deibel Laboratories  
DuPont Nutrition & Health  
EMD Millipore  
FDA/Center for Food Safety  
and Applied Nutrition  
Food Quality Magazine  
Food Safety Magazine  
Food Safety Summit

Hygiene  
IEH Laboratories and  
Consulting  
International Food Hygiene  
Meritech, Inc.  
Michigan State University  
Master of Science in Food  
Safety  
Microbiologics  
Microbiology International

The National Food Lab  
Neogen Corporation  
Neutec Group, Inc.  
Orkin, LLC  
Procter & Gamble  
Quality Assurance & Food Safety  
Magazine  
R & F Laboratories  
Springer  
Zep Sales & Service

## EXHIBIT HOURS

**Sunday, July 28**

7:30 p.m. – 9:30 p.m.

**Monday, July 29**

10:00 a.m. – 6:00 p.m.

**Tuesday, July 30**

10:00 a.m. – 6:00 p.m.

# STUDENT ACTIVITIES

## STUDENT LUNCHEON

Sunday, July 28

12:00 p.m. – 1:30 p.m.  
Room 217D



## STUDENT MIXER

Tuesday, July 30

7:00 p.m. – 9:00 p.m.  
Room 217D



## JOB BOARD

Attention Job Seekers  
and Employers!

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

Detailed information is available at the Student PDG booth, located in the Exhibit Hall.



## SUPPORT THE STUDENTS OF IAFP

The IAFP Student Professional Development Group (SPDG) will be selling T-shirts at the Annual Meeting. The shirts will be available at the SPDG booth. If you have any questions, please contact Pardeep Brar at [pbrar27@ufl.edu](mailto:pbrar27@ufl.edu).

## SPONSORS

British Columbia Food Protection Association

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John Morrell Food Group



# OPENING SESSION

## Sunday, July 28

Ballroom A and B, Charlotte Convention Center \_\_\_\_\_ 6:00 p.m.

### Welcome to IAFP 2013

Katherine M.J. Swanson, IAFP President  
Steve Tracey, Carolinas Association for Food Protection

### IAFP Foundation

Vickie Lewandowski, Foundation Committee

### Student Travel Scholarship Awards

Katie Swanson, IAFP President  
Vickie Lewandowski, Foundation Committee

*Gbenga Adewumi*  
*Apurba Chakraborty*  
*Clarisse S. Compaorè*

*Amanda M. King*  
*Edyta Margas*  
*Ismail Odetokun*  
*Lorraine Rodriguez-Rivera*

*Dong Joo Seo*  
*Elizabeth Noelia Williams*  
*Yishan Yang*

### Travel Award for State or Local Health or State Agricultural Employees

Katie Swanson, IAFP President  
Vickie Lewandowski, Foundation Committee

*Kathryn Bennett*  
*Barbara Cote*

*Angela Fritzinger*  
*Krissa Jones*

### Travel Award for a Food Safety Professional in a Developing Country

Katherine M.J. Swanson, IAFP President  
Vickie Lewandowski, Foundation Committee  
*Ratih Dewanti-Hariyadi*

### Fellow Award

Katherine M.J. Swanson, IAFP President  
Isabel Walls, Past President  
*Gary R. Acuff*

### Introduction of the Ivan Parkin Lecture

Donald Schaffner, IAFP President-Elect

### The Ivan Parkin Lecture

**The Future of Food Safety**, David W.K. Acheson, M.D., F.R.C.P., Leavitt Partners LLC, Washington, D.C.

### Closing Comments

Katherine M.J. Swanson, IAFP President

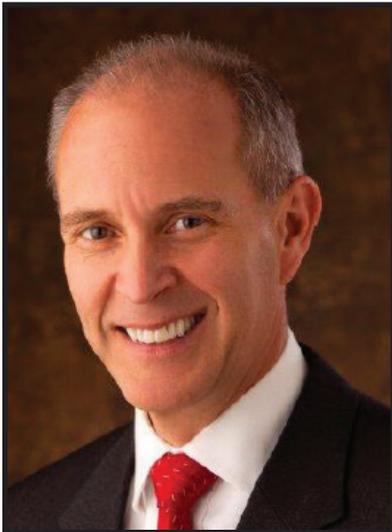
### Cheese and Wine Reception

Sponsored by  and 

IAFP Exhibit Hall, Charlotte Convention Center \_\_\_\_\_ 7:30 p.m.

# IVAN PARKIN LECTURE

At the Opening Session • Sunday, July 28 • 6:00 p.m. – 7:30 p.m.



**David W.K.  
Acheson**

M.D., F.R.C.P.  
Leavitt Partners LLC  
Washington, D.C.

**D**r. David Acheson is a Partner and the Managing Director for Food and Import Safety at Leavitt Partners LLC, a consulting firm with offices in Salt Lake City, Utah and Washington D.C. that works with multi-national food and technology clients to address food safety and food defense challenges.

Dr. Acheson graduated from the University of London Medical School and practiced internal medicine and infectious diseases in the United Kingdom until 1987, when he moved to the New England Medical Center and became an Associate Professor at Tufts University in Boston, studying the molecular pathogenesis of foodborne pathogens, focusing on Shiga toxin-producing *Escherichia coli*.

Prior to joining Leavitt Partners, Dr. Acheson served as the Chief Medical Officer at the U.S. Food and Drug Administration's (FDA) Center for Food Safety and Applied Nutrition (CFSAN). After serving in several other positions with the FDA, he was appointed as Associate Commissioner for Foods, which gave him an agency-wide leadership role for all food and feed issues, including health promotion and nutrition. He was responsible for the development of the 2007 Food Protection Plan, which served as the basis for many of the authorities granted to the FDA by the Food Safety Modernization Act.

Dr. Acheson has published extensively, is internationally recognized for his expertise in food safety and research in infectious diseases, and appears regularly as a guest on national news programs. He is a fellow of both the Royal College of Physicians (London) and the Infectious Disease Society of America, as well as a member of the American Society for Microbiology (ASM), the Institute of Food Technologists (IFT), and the International Association for Food Protection (IAFP).

## The Future of Food Safety

David W.K. Acheson, M.D., F.R.C.P.

Leavitt Partners LLC, Washington, D.C.

Food safety generally evolves slowly and methodically over time without a lot of planning interspersed with the occasional growth spurt such as the FSIS Mega Reg for HACCP in the mid '90s, and the current FDA focus on the Food Safety Modernization Act. Both of these events were regulatory, and both were triggered by one or more public health disasters involving loss of life from foodborne illness. In the past, improvements in food safety have largely been driven by regulatory change such as the two mentioned above. Today, the primary drivers for food safety have shifted for many in the food industry with the focus now being primarily on risk management and brand protection not necessarily focusing first, and sometimes only, on regulatory compliance. But despite the capacity for media and consumer buying habits to put brands into bankruptcy, there are some in the food industry that simply don't understand what to do, are complacent about what they are doing, or worse, are occasionally putting profit before safety.

As we look to the future for food safety, what does our crystal ball tell us? Will brand protection be the primary driver in the future? Or will regulatory compliance if the regulators become more powerful and more prescriptive? Maybe technology drives our actions with scientific advances impacting the industry? What will be the impact of the

growing global food supply chain? As you can see, these ever-changing dynamics create the possibility for lots of speculation, so let's indulge in just that. What would look *right* – what would we wish for food safety – what would we do if we were king (or queen) for the day? This platform provides a unique opportunity to speculate on just such topics – to think big picture and to pose some provocative possibilities of where food safety should be in 10, 20 or more years into the future.

To be thinking what the regulatory structure may look like, who is going to pay, what consumers may be demanding are all fun topics for speculation, yet are tangible issues that do need substantive thought and planning if they are going to be successful. But isn't that a novel concept, "substantive thought and planning for food safety?" How do we accomplish that?

Food is a multi-billion dollar business with very high stakes in a commodity that every human and animal needs every day of their lives and thus present both massive opportunity and substantive risk. This presentation will touch on the past and the present and use them as a launching pad to speculate on what the future for food safety should look like if we as an industry plan it, and what it may look like if we don't.

# 8<sup>th</sup> DUBAI INTERNATIONAL FOOD SAFETY CONFERENCE

*Leading Innovation and Change*

17 - 19 November 2013

Dubai Convention and Exhibition Centre

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International Association for  
Food Protection®



# PROGRAM

## MONDAY MORNING JULY 29

(Posters will be on display 10:00 a.m. – 6:00 p.m.  
See details beginning on page 47)

### S1 Fresh Produce: Are Current GAPs Recommendations Sufficient for Food Safety?

*Charlotte Convention Center, Ballroom A*  
Sponsored by the IAFP Foundation

**Organizers: Joshua Gurtler, Elizabeth Bihn, Siddhartha Thakur**  
**Convenors: Joshua Gurtler, Elizabeth Bihn, Siddhartha Thakur**

- 8:30 Produce GAPs Regulations or Recommendations: An Industry Perspective  
REGGIE BROWN, Florida Tomato Committee, Maitland, FL, USA
- 9:00 Produce and Irrigation Water Quality: Are EPA Standards Appropriate for Fresh Produce Applications?  
MICHELLE DANYLUK, University of Florida, Lake Alfred, FL, USA
- 9:30 Issues with Organic Fertilizers: Composting vs. Raw Manure Application  
MANAN SHARMA, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- 10:00 Break
- 10:30 Buffer Zones and the Impact of Animal Farm Proximity on Pathogen Transmission to Fresh Produce Farms  
ELAINE BERRY, U.S. Department of Agriculture-ARS, Clay Center, NE, USA
- 11:00 Does Farm Size Impact Food Safety?  
ELIZABETH BIHN, Cornell University, Geneva, NY, USA
- 11:30 Risk Modeling Approach to Determine the Impact of Pre-harvest Environment on Fresh Produce  
DAVID ORYANG, U.S. Food and Drug Administration, College Park, MD, USA

### S2 Foodborne Outbreaks – Domestic and International: What are We Learning?

*Charlotte Convention Center, Ballroom B*

**Organizer: Sherri McGarry**  
**Convenor: Sherri McGarry**

- 8:30 *Salmonella* Typhimurium Linked to Cantaloupe. How Do We Prevent This?  
SHERRI MCGARRY, U.S. Food & Drug Administration, College Park, MD, USA
- 9:00 State Regulatory Perspective – Indiana  
SCOTT GILLIAM, Indiana State Department of Health, Indianapolis, IN, USA
- 9:30 Industry Perspection on Cantaloupe Outbreak  
BRAD JOHNSTON, MultiCorr, Indianapolis, IN, USA
- 10:00 Break
- 10:30 CDC Update - Multistate Outbreak of *Salmonella* Typhimurium and *Salmonella* Newport Infections Linked to Cantaloupe  
IAN WILLIAMS, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 11:00 Sampling Aspect - FRANK BOELAERT, EFSA, Parma, Italy

### S3 Getting the Word Out for a Safe Food Supply

*Charlotte Convention Center, 217A*  
Sponsored by the IAFP Foundation

**Organizers: Aaron Pleitner, Clyde Manuel**  
**Convenors: Aaron Pleitner, Clyde Manuel**

- 8:30 How to Survive a Zombie Apocalypse: A CDC Viral Media Success Story  
CATHERINE JAMAL, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 9:00 Food Safety and the Media from an Educational Standpoint  
BRUCE APPLGATE, Purdue University, West Lafayette, IN, USA
- 9:30 Public Perception of Pink Slime through Media Outlets  
JANET RILEY, American Meat Institute, Washington, D.C., USA
- 10:00 Break

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

**Check the Program Addendum for changes to the Program**

- 10:30 Surveillance of Norovirus Disease Using Google: An Example of Digital Epidemiology  
ARON HALL, Centers for Disease Control & Prevention, Atlanta, GA, USA
- 11:00 Food Safety Crisis Management: A Pro- and Re-active Approach to Food-related Crises  
WENDY WHITE, Golden State Foods, Conyers, GA, USA
- 11:30 Food Safety Risk Assessments and Information Management Systems  
TIMOTHY SELLNOW, University of Kentucky, Lexington, KY, USA

**S4** **Chemical Risk Assessment 101: A Better Understanding of a Complex Subject Made Easier**

*Charlotte Convention Center, 217BC*

**Organizers: Jena Roberts, Alison Kretser, Mark Moorman, Anthony Flood**  
**Convenors: Jena Roberts, Alison Kretser**

- 8:30 What are the Potential Chemical Hazards in Foods?  
MARK MOORMAN, Kellogg Company, Battle Creek, MI, USA
- 9:00 Chemical Hazards: How Do We Translate Presence to Risk? An Overview of Risk Analysis  
JAMES COUGHLIN, Coughlin & Associates, Aliso Viejo, CA, USA
- 9:30 Chemical Safety Assessment Program at FDA-CFSAN  
SUZANNE FITZPATRICK, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

10:00 Break

**S5** **Persistent and Ongoing Food Allergen Challenges: Labeling, Detection and Control**

*Charlotte Convention Center, 217BC*

**Organizer: Kenneth Davenport**  
**Convenor: Kenneth Davenport**

- 10:30 Food Allergen Labeling: The Evolving Regulatory Landscape in the United States  
STEVEN GENDEL, U.S. Food and Drug Administration, College Park, MD, USA
- 11:00 Food Allergen Detection Technology: Update on State-of-the-Art Tools  
JOSEPH BAUMERT, University of Nebraska-Lincoln, Lincoln, NE, USA
- 11:30 Environmental Monitoring and Allergen Control - Best Practices  
DOUGLAS MARSHALL, Eurofins Scientific Inc., Fort Collins, CO, USA

**S6** **Linking Pests and Pathogens of Food Safety**

*Charlotte Convention Center, 217D*

*Sponsored by the IAFP Foundation*

**Organizer: John Barcay**  
**Convenor: John Barcay**

- 8:30 Pathogens of Food Service Operations Identified in Fruit Fly (*Drosophila* spp.) Breeding Locations  
JOHN BARCAY, Ecolab Inc., St. Paul, MN, USA
- 9:00 Food Processing Case Studies around Foodborne Illness as Connected to Pest Presence and Avenues of Contamination  
ROY COSTA, Food Industry Consultant, R.S., DeLand, FL, USA

- 9:30 Dairy Processing and Food Retail Pest Management with Focus on Control and Preventing Contamination and Potential Transmission of Foodborne Contamination  
GALE PRINCE, Retired - Corporate Regulatory Affairs, Cincinnati, OH, USA

10:00 Break

**S7** **Culture Independent Diagnostics**

*Charlotte Convention Center, 217D*

*Sponsored by the ILSI North America Technical Committee on Food Microbiology*

**This session is held in honor of Michael Foster**

**Organizer: Ashley Jarvis**

**Convenors: Peter Gerner-Smidt, Les Smoot**

- 10:30 Culture Independent Diagnostic Tests, An Overview  
MARIO MARCON, The Ohio State University, Columbus, OH, USA
- 11:00 Culture Independent Diagnostic Testing – The End of Surveillance of Foodborne Infections?  
JOHN BESSER, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 11:30 A World without Cultures – Food Regulatory Implications  
PHILIP BRONSTEIN, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

**S8** **From Grapes to the Glass: Food Safety Issues That Affect Wine throughout the Production Chain**

*Charlotte Convention Center, 213A*

*Sponsored by the IAFP Foundation*

**Organizers: Linda Leake, Patrice Arbault, W. Evan Chaney**

**Convenors: Linda Leake, Patrice Arbault, W. Evan Chaney**

- 8:30 Clean Counts for Cabernet, Chardonnay and All Their Cousins: The Red and White Facts of Hygiene, Sanitation, Disinfection and Water Management in a Winery  
RANDY WOROBO, Cornell University, Geneva, NY, USA
- 9:00 Proactive Approach: International Wine Labeling Regulations for Food Safety, Including Allergen Traceability, Public Health and Export Issues  
BRENT TRELA, Texas Tech University, Lubbock, TX, USA
- 9:30 Cask of Thousands: Wine Storage, Bottling, Closure and Packaging Safety and Quality  
GLENN O'DELL, Constellation Brands, U.S., Inc., Acampo, CA, USA

10:00 Break

**S9** **Food Safety Education: The Value of Education and Outreach to Advancing the Development of Future Food Safety Leaders**

*Charlotte Convention Center, 213A*

**Organizers: Travis Chapin, Lee-Ann Jaykus, Martin Wiedmann**

**Convenors: Alicia Orta Ramirez, Lynette Johnston**

- 10:30 Food Safety Education Fulfills Education Standards in the K-12 Curriculum  
KALMIA KNIEL, University of Delaware, Newark, DE, USA

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- 10:50 Use of Food Safety Modules to Improve Population Food Safety Practices and Recruit Students into Food Safety Careers  
TRAVIS CHAPIN, Cornell University, Ithaca, NY, USA
- 11:10 NIFA Education and Extension Programs: Incorporating an Education or Extension Component into Your Research Proposal  
ISABEL WALLS, U.S. Department of Agriculture-NIFA, Washington, D.C., USA
- 11:30 Panel Discussion

**RT1 Food Safety Links in Cross Border Health Initiatives between the U.S., Canada and Mexico**

*Charlotte Convention Center, 218-219*  
Sponsored by the IAFP Foundation

**Organizer: Ewen Todd**  
**Convenor: Ewen Todd**

- 10:30 Panelists:  
EILISH CLEARY, Chief Medical Officer of Health, Fredericton, NB, Canada  
CARRIE RIGDON, Minnesota Department of Agriculture, St. Paul, MN, USA  
LINDA GAUL, Texas Department of State Health Services, Austin, TX, USA  
WAYNE TURNBERG, Washington State Department of Health, Shoreline, WA, USA

**T1 Technical Session 1 – Meat and Poultry**

*Charlotte Convention Center, 213BC*

**Convenors: Randall Phebus, Chander Shekhar Sharma**

- T1-01 8:30 Diversity among *Campylobacter* spp., Using *flaA* Typing, through a Commercial Poultry Production and Processing Chain  
Andrew Wong, Jeremy Chenu, Anthony Pavic, JULIAN COX, The University of New South Wales, Sydney, Australia
- T1-02 8:45 Comparison of the Microbiological Status of Commercial Broiler Carcasses after 24 and 48 Hour Continuous Production  
ANTHONY PAVIC, Jeremy Chenu, Julian Cox, Baida Poultry, Bringelly, Australia
- T1-03 9:00 The Safety and Quality of Recycled Scald Tank Water from Commercial Poultry Processing, Treated Using a Ceramic Membrane System  
DAVID GRANT, Gregory Leslie, Julian Cox, The University of New South Wales, Sydney, Australia
- T1-04 9:15 *Salmonella* in Broiler Carcass Bone Marrow and Neck Skin: Potential Sources for Ground Chicken Contamination  
DIEZHANG WU, Walid Alali, Mark Harrison, Charles Hofacre, University of Georgia, Griffin, GA, USA
- T1-05 9:30 Effectiveness of Several Antimicrobials Used in Parts Decontamination Tank to Kill *Salmonella* and *Campylobacter* on Chicken Parts  
LEI ZHANG, Laura Bauermeister, Gretchen Nagel, Kristin Deitch, Xi Chen, Shelly McKee, Auburn University, Auburn, AL, USA
- T1-06 9:45 The Effect of Post-chill Antimicrobials on *Salmonella*, *Campylobacter*, Shelf Life and Quality Attributes of Ground Chicken  
XI CHEN, Laura Bauermeister, Lei Zhang, Gretchen Nagel, Kristin Deitch, Shelly McKee, Auburn University, Auburn, AL, USA

- 10:00 Break
- T1-07 10:30 *Salmonella* Concentration, Serotypes, and Antimicrobial Resistance on Raw Poultry in Emerging Market Countries (China, Colombia, Guatemala, Russia, and Vietnam)  
WALID ALALI, Baowei Yang, Pilar Donado, Yen Ta, Roman Gaidashov, Claudia Jarquin, Isabel Walls, Michael Doyle, University of Georgia, Griffin, GA, USA
- T1-08 10:45 Comparison of Nitrite from Purified and Natural Sources on Inhibition of *Clostridium perfringens* Outgrowth during Cooling of Cured Turkey Breast According to FSIS Appendix B  
AMANDA KING, Kathleen Glass, Jeffrey Sindelar, University of Wisconsin-Madison, Madison, WI, USA
- T1-09 11:00 Prevalence of Rotavirus, Bovine Enteric Calicivirus and F-RNA Coliphages on Commercial Vacuum-packaged Beef  
TINEKE JONES, Victoria Muehlhauser, Agriculture and Agri-Food Canada, Lacombe, AB, Canada
- T1-10 11:15 Prevalence of Shiga Toxin-producing *Escherichia coli* (STEC) in Beef Cattle and Cattle Farms in Arkansas Delta Region  
SOOHYOUN AHN, Monica Yarbrough, Harneet Kaur, Seo-Eun Choi, David Gilmore, Donald Kennedy, University of Florida, Gainesville, FL, USA
- T1-11 11:30 Detection and Characterization of *Salmonella* from Butchery Utensils  
MARCUS VINÍCIUS COUTINHO COSSI, Raquel Cristina Konrad Burin, Danilo Augusto Lopes Silva, Mariane Rezende Dias, Natalia Parma Castilho, Petrônio Soares, Paulo Sergio de Arruda Pinto, Luís Augusto Nero, Universidade Federal de Viçosa, Viçosa, Brazil
- T1-12 11:45 Prevalence of *Salmonella enterica*, *Escherichia coli* O157:H7 and Non-O157 Shiga Toxin-producing *Escherichia coli* in Beef Cuts Sold at Retail Markets in Costa Rica  
BYRON D. CHAVES, Lyda G. Garcia, Alejandro Echeverry, Markus F. Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

**T2 Technical Session 2 – Communication Outreach and Education, Sanitation, Seafood**

*Charlotte Convention Center, 213D*

**Convenors: Kalmia Kniel, Michael Roberson**

- T2-01 8:30 High School Students as the Target of Food Safety Education: Successful Results from a Pilot Study  
ANNE BURKE, Mark Dworkin, University of Illinois at Chicago School of Public Health, Chicago, IL, USA
- T2-02 8:45 Implementing Good Agricultural Practices (GAPs) in School and Community Gardens  
ASHLEY CHAIFETZ, Kristina Alnajjar, Alice Ammerman, Benjamin Chapman, University of North Carolina, Chapel Hill, NC, USA
- T2-03 9:00 Food Safety Knowledge and Behavior among Low Socioeconomic African-Americans in Chicago: Results of Focus Groups  
ULETTA JACKSON, Preethi Pratap, Mark Dworkin, University of Illinois at Chicago School of Public Health, Chicago, IL, USA
- T2-04 9:15 Substantial Efficacy of a Food Safety Educational Intervention for Persons Living with AIDS Using a Comic Book Format  
MARK DWORKIN, Caryn Peterson, Angel Mayor, Robert Hunter, Edna Negron, Weihua Gao, Alison Fleury, C. Lynn Besch, University of Illinois at Chicago School of Public Health, Chicago, IL, USA

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- T2-05 Principles of Effective Produce Safety Training and Program Delivery for Fresh Fruit and Vegetable Farmers  
9:30  
GRETCHEN WALL, Elizabeth Bihn, Cornell University, Ithaca, NY, USA
- T2-06 Tracing Temperature Patterns of Cut Leafy Greens during Transportation  
9:45  
ELLEN THOMAS, Benjamin Chapman, Christopher Gunter, Lee-Ann Jaykus, Trevor Phister, North Carolina State University, Raleigh, NC, USA
- 10:00 Break
- T2-07 Validation of Chlorine Efficacy to Disinfect Process Wash Water Simulating Industrial Conditions  
9:30  
MARIA I. GIL, Vicente M. Gómez-López, Ann-Sophie Lannoo, Ana Allende, CEBAS-CSIC, Murcia, Spain
- T2-08 Inactivation of Human Enteric Virus Surrogates on Stainless Steel Surfaces by Non-thermal Plasma  
10:45  
DORIS D'SOUZA, Xiaowei Su, David Golden, University of Tennessee, Knoxville, TN, USA

- T2-09 Evaluation of Deep Cleans in Retail Delis as a *Listeria monocytogenes* Control Strategy  
11:00  
SUSAN HAMMONS, Thomas Ford, Michael Howard, Jingjin Wang, Haley Oliver, Purdue University, West Lafayette, IN, USA
- T2-10 *Listeria monocytogenes* in Smoked Fish Production  
11:15  
NORVAL STRACHAN, Ovidiu Rotariu, John Thomas, Kaarin Goodburn, Michael Hutchison, University of Aberdeen, Aberdeen, United Kingdom
- T2-11 Assessing Efficacy of Commercially Available Antimicrobial Compounds for Controlling Growth of *Listeria monocytogenes* in Modified BHI Broth and Cold-smoked Salmon  
11:30  
JIHUN KANG, Cornell University, Ithaca, NY, USA
- T2-12 Detection of Histamine-producing Bacteria in Scombrotoxin forming Fish from the Gulf of Mexico  
11:45  
KRISTIN BJORNSDOTTIR-BUTLER, Ronald Benner, Jr., U.S. Food and Drug Administration, Dauphin Island, AL, USA

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

# SPECIAL SESSION

## The Food Safety Preventive Controls Alliance (FSPCA) Education and Outreach

Tuesday, July 30 • 3:30 p.m. – 5:00 p.m.

Room 213A

### Speakers:

Purnendu C. Vasavada, FSPCA, U.S. Food and Drug Administration-ORISE  
 Jenny Scott, U.S. Food and Drug Administration-CFSAN  
 Robert E. Brackett, Illinois Institute of Technology-IFSH  
 Katherine Swanson, FSPCA, KMJ Swanson Food Safety  
 Glenn Black, Grocery Manufacturer's Association



## MONDAY AFTERNOON JULY 29

(Posters will be on display 10:00 a.m. – 6:00 p.m.  
See details beginning on page 47)

### S10 The USDA-NIFA Food Virology Collaborative (NoroCORE): A Model for an Integrated, Multidisciplinary Approach to Addressing the Leading Cause of Foodborne Disease

*Charlotte Convention Center, Ballroom A*

**Organizer:** Lee-Ann Jaykus

**Convenors:** Lee-Ann Jaykus, Aron Hall

- 1:30 Burden of Human NoV Disease and Attribution to Food  
ARON HALL, Centers for Disease Control & Prevention, Atlanta, GA, USA
- 2:00 The Cultivable Surrogate Viruses: How They Can (and Cannot) Be Used to Predict Human NoV Behavior  
KALMIA KNIEL, University of Delaware, Newark, DE, USA
- 2:30 Human NoV Detection In Foods and the Environment: Is This a Practical Reality?  
LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA
- 3:00 Break
- 3:30 Low Density Microarray Technologies for Rapid Human NoV Genotyping  
BEATRIZ QUINONES, U.S. Department of Agriculture-ARS, Albany, CA, USA
- 4:00 Challenges and Successes to Modifying Human Behavior in an Effort to Prevent Foodborne Transmission of Human NoV  
ANGELA FRASER, Clemson University, Clemson, SC, USA
- 4:30 Emerging Technologies to Inactivate Human NoV in Foods  
ALVIN LEE, Institute for Food Safety and Health, Bedford Park, IL, USA

### S11 Molecular Methods for Advancing Food Safety

*Charlotte Convention Center, Ballroom B*

**Organizers:** Pina Fratamico, Joshua Gurtler

**Convenors:** Pina Fratamico, Joshua Gurtler

- 1:30 Genomics in Food Security: 100K Pathogen Genome Project  
BART WEIMER, University of California-Davis, Davis, CA, USA
- 2:00 Relevance of Current Molecular Typing Methodology to Epidemiological Investigations and Food Safety  
SHANNON MANNING, Michigan State University, East Lansing, MI, USA
- 2:30 Application of MALDI-TOF in the Identification of Foodborne Pathogens: Current Status and Future Opportunity  
DAVID PINCUS, bioMérieux, Inc., Hazelwood, MO, USA
- 3:00 Break

### S12 The Application of Bioinformatic Analyses in Foodborne Pathogen Characterization

*Charlotte Convention Center, Ballroom B*

*Sponsored by the IAFP Foundation*

**Organizers:** Wen Zou, Keith Lampel, Marianna Naum

**Convenors:** Wen Zou, Keith Lampel

- 3:30 Bioinformatic Tools for Metagenomic and Genomic Food Safety Research  
ANDREA OTTESEN, U.S. Food and Drug Administration, College Park, MD, USA
- 4:00 Data Mining Tools for *Salmonella* Characterization; Application to Gel-based Fingerprinting  
WEN ZOU, U.S. Food and Drug Administration, Jefferson, AR, USA
- 4:15 Role of Evolution in the Adaptation of Pathogens to Their Environments  
KEITH LAMPEL, U.S. Food and Drug Administration, College Park, MD, USA
- 4:30 Application of Genomics on the Development of Monoclonal Antibodies and Molecular Probes for Detection of *Listeria*  
MIN LIN, Canadian Food Inspection Agency, Ottawa, ON, Canada
- 4:45 *Campylobacter* Genomic Diversity and Implications for Molecular Epidemiology: New Insights from Whole-genome Sequence Analysis  
EDUARDO TABOADA, Public Health Agency of Canada, Lethbridge, ON, Canada

### S13 Sanitation Stories: Tall But True

*Charlotte Convention Center, 217A*

**Organizers:** Jeffrey Kornacki, David Blomquist

**Convenors:** Jeffrey Kornacki, David Blomquist

- 1:30 Sanitation – A Little Chemistry Can Go a Long Way  
DAVID BLOMQUIST, Ecolab Food & Beverage Division, Eagan, MN, USA
- 2:00 “All Wet” – Experiences with Wet and Dry Cleaning  
JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA
- 2:30 At Risk Situations by Design (Facility and Equipment)  
JOSEPH STOUT, Commercial Food Sanitation, LLC, Chicago, IL, USA
- 3:00 Break

### S14 Ecology of *Campylobacter* and *Salmonella* in Pasture Poultry/Mixed Farm and Their Control with Natural Organic Antimicrobials

*Charlotte Convention Center, 217A*

*Sponsored by the IAFP Foundation*

**Organizer:** Debabrata Biswas

**Convenor:** Debabrata Biswas

- 3:30 Dynamics of Mixed Farm Practice and Ecology of Foodborne Pathogens  
DEBABRATA BISWAS, University of Maryland, College Park, MD, USA
- 4:00 *Salmonella* and *Campylobacter* in Pasture/Mixed Farm  
WALID ALALI, University of Georgia, Griffin, GA, USA

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

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4:30 Antibiotic Resistance and Use of Natural and Organic Antimicrobials  
IRENE HANNING, University of Tennessee, Knoxville, TN, USA

**S15** **Where the Wild Things are: Role of Wildlife in the Safety of the Food Supply**

*Charlotte Convention Center, 217BC*

**Organizers: Lawrence Goodridge, Mary Torrence, Jeffrey LeJeune**

**Convenors: Jeffrey LeJeune, Mary Torrence, Kevin Allen, Paula Fedorka-Cray**

1:30 Alfred Hitchcock and the Safety of Your Burger: The Role of Wild Birds in Disseminating Pathogens to Cattle  
DAVID PEARL, University of Guelph, Guelph, ON, Canada

2:00 Been There, Done That: A Scoping Study of Foodborne Pathogen Literature at the Wildlife:Livestock Interface  
JUDY GREIG, Public Health Agency of Canada, Guelph, ON, Canada

2:30 Bats in the Belfry: Contamination of the Food Supply with Nipah Virus in Bangladesh  
SALAH UDDIN KHAN, University of Florida, Gainesville, FL, USA

3:00 Break

3:30 What's Mine is Yours, and What's Yours is Mine? Sharing of Antibiotic Resistant Flora between Livestock and Wildlife  
MALCOM BENNETT, University of Liverpool, Liverpool, United Kingdom

4:00 Who Has Been Eating Your Salad before It Got to Your Plate? Wildlife Intrusion in Vegetable Production  
MICHELE JAY-RUSSELL, University of California-Davis, Davis, CA, USA

4:30 Raccoons at the Trough: Role of Wild Mammals in Disseminating AMR Bacteria to and from Feedlots  
ALAN FRANKLIN, U.S. Department of Agriculture-NWRC-WS, Ft. Collins, CO, USA

**S16** **Antimicrobial Resistance and Food Safety in the 21st Century**

*Charlotte Convention Center, 217D*

*Sponsored by the IAFP Foundation*

**Organizers: Vijay Juneja, Joshua Gurtler, Brooke Schwartz**

**Convenors: Vijay Juneja, Joshua Gurtler**

1:30 Role of Sanitizers and Food Preservatives on Antimicrobial Resistance in Food Processing  
P. MICHAEL DAVIDSON, University of Tennessee, Knoxville, TN, USA

2:00 Antimicrobial Resistant Bacteria in the Food Supply – A European Perspective  
STUART REID, University of Glasgow, Glasgow, United Kingdom

2:30 FDA Antimicrobial Resistance Initiatives: Monitoring and Policies  
DAVID WHITE, U.S. Food and Drug Administration, Washington, D.C., USA

3:00 Break

3:30 Tracking Antimicrobial-resistant Bacteria from Farm to Fork  
PAULA FEDORKA-CRAY, U.S. Department of Agriculture-ARS-BEAR, Athens, GA, USA

4:00 USDA Perspective on Antimicrobial Resistance and Antibiotic Use in Livestock Production  
BILL SHAW, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

4:30 Antibiotic Use in Agriculture: Meat Industry Perspective  
BETSY BOOREN, American Meat Institute Foundation, Washington, D.C., USA

**RT2** **China Food Safety: Needs, Challenges and Approaches**

*Charlotte Convention Center, 218-219*

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

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

1:30 Panelists:

YANBIN LI, University of Arkansas, Fayetteville, AR, USA

PAMELA WILGER, Cargill, Inc., Wayzata, MN, USA

XIUMEI LIU, Ministry of Health, Beijing, China

LESLIE BOURQUIN, Michigan State University, East Lansing, MI, USA

JASON WAN, Institute for Food Safety and Health, Bedford Park, IL, USA

3:00 Break

**RT3** **Current Controversies in Food Safety**

*Charlotte Convention Center, 213A*

*Sponsored by the ILSI North America Technical Committee on Food Microbiology*

*Voting devices provided by Alchemy Systems*

**Organizer: Ashley Jarvis**

**Convenors: Ashley Jarvis, Joe Shebuski, Marguerite Neill**

3:30 Panelists:

FRANCISCO DIEZ, University of Minnesota, St. Paul, MN, USA

DOUGLAS POWELL, Kansas State University, Manhattan, KS, USA

MICHAEL ROBACH, Cargill, Minneapolis, MN, USA

JOSEPH MEYER, Covance Laboratories, Inc., Battle Creek, MI, USA

DAVID ACHESON, Leavitt Partners, Glenelg, MD, USA

LINDA HARRIS, University of California-Davis, Davis, CA, USA

**T3** **Technical Session 3 – Antimicrobials, General Microbiology, Meat and Poultry**

*Charlotte Convention Center, 213BC*

**Convenors: Elizabeth Grasso, Rocelle Clavero**

T3-01 Assessing Country Food Safety Risk for Bovine Spongiform Encephalopathy

1:30 SCOTT CRERAR, Food Standards Australia New Zealand, Canberra BC, Australia

T3-02 Development of Dynamic and Probabilistic Models to Predict

1:45 *Listeria monocytogenes* Growth

HEEYOUNG LEE, Soomin Lee, Panagiotis Skandamis, Joo-Yeon Lee, Mi-Hwa Oh, Beomyoung Park, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- T3-03 2:00 [Escherichia coli O157:H7 and Salmonella Biofilms Formation and Removal Using Various Sanitizers](#)  
ISMAIL ODETOKUN, Victoria Adetunji, University of Ibadan, Ibadan, Nigeria
- T3-04 2:15 [Inhibition of Listeria monocytogenes in Deli-style Turkey Breast Using Alternate Curing Systems and Clean Label Antimicrobials](#)  
KATHLEEN GLASS, Lindsey McDonnell, Max Golden, Vivien Sheehan, Jeffrey Sindelar, University of Wisconsin-Madison, Madison, WI, USA
- T3-05 2:30 [Effectiveness of Bacteriophage Listex™ P100 in Reducing Listeria monocytogenes on Roast Beef and Cooked Turkey](#)  
Andrew Chibeu, LOUISE AGIUS, Parviz Sabour, Andrew M. Kropinski, S. Balamurugan, University of Guelph, Guelph, ON, Canada
- T3-06 2:45 [Phenotypic and Genotypic Characterization of Salmonella enterica serovar Dublin Isolates from Cattle and Humans](#)  
MELANIE ABLEY, Paula Fedorka-Cray, Rebecca Lindsey, Jason Folster, Jean Whichard, U.S. Department of Agriculture-ARS-BEAR, Athens, GA, USA
- 3:00 [Break](#)
- T3-07 3:30 [Prevalence and Characterization of Cefotaxime-resistant Microbes in Animal Farms](#)  
RAIES MIR, Won-Sik Yeo, Todd Bliss, Kwang Cheol Jeong, University of Florida, Gainesville, FL, USA
- T3-08 3:45 [Efficacy of Pseudomonas fluorescens for Biocontrol of Escherichia coli O157:H7 on Spinach](#)  
MODESTO OLANYA, Dike Ukuku, Brendan Niemira, Bassam Annous, Christopher Sommers, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- T3-09 4:00 [The Effect of NaCl on Antibiotic Sensitivity and Biofilm Formation of Salmonella](#)  
Hyunjoo Yoon, Heeyoung Lee, YOHAN YOON, Sookmyung Women's University, Seoul, South Korea
- T3-10 4:15 [Influence of Illumination Temperature and Wavelength on Bactericidal Effect of Light Emitting Diodes](#)  
Vinayak Ghate, Kheng Siang Ng, Weibiao Zhou, Hyunsoo Yang, Gek Hoon Khoo, Won-Byong Yoon, HYUN-GYUN YUK, National University of Singapore, Singapore, Singapore
- T3-11 4:30 [What is the Best Surrogate for Human Norovirus?](#)  
THERESA CROMEANS, Geun Woo Park, David Lee, Qihong Wang, Sagar Agarwal, Eduardo Patazca, Stephen Grove, Alvin Lee, Jan Vinje, Centers for Disease Control and Prevention, Atlanta, GA, USA
- T3-12 4:45 [Safety of Enterococcus faecium NRRL B-2354 \(ATCC 8459\) for Use as a Surrogate in Thermal Process Validation](#)  
LAUREN KOPIT, Eun Bae Kim, Linda Harris, Maria Marco, University of California, Davis, Davis, CA, USA
- T4 Technical Session 4 – Applied Laboratory Methods, Food Defense, Novel Laboratory Methods**  
*Charlotte Convention Center, 213D*  
**Convenors: Jennifer Cannon, Thomas Ford**
- T4-01 1:30 [Development of a Label-free Surface Enhanced Raman Scattering Method for the Detection and Differentiation of Foodborne Pathogenic Bacteria in Mung Bean Sprouts](#)  
XIAOMENG WU, Chao Xu, Ralph Tripp, Yaowen Huang, Yiping Zhao, University of Georgia, Athens, GA, USA
- T4-02 1:45 [Rapid Identification of Salmonella Serovars by Flow Cytometry-based Multiplexing Analysis System](#)  
MUHSIN AYDIN, Soohyoun Ahn, Arkansas State University, Jonesboro, AR, USA
- T4-03 2:00 [Evaluation of Molecular Alternatives to Traditional Serotyping for Salmonella enterica subs. enterica](#)  
SHANNON COLEMAN, Rachel McEgan, Jeffrey Chandler, Bledar Bisha, Alma Perez-Mendez, Wanda Manley, Kally Probasco, Douglas Marshall, Michelle Danyluk, Lawrence Goodridge, Colorado State University, Fort Collins, CO, USA
- T4-04 2:15 [Mining of the Specific Molecular Detection Targets of Salmonella enterica and Genotyping of Its Isolates](#)  
XIANMING SHI, Lida Zhang, Bin Liu, Weibing Liu, Xiujuan Zhou, Shanghai Jiao Tong University, Shanghai, China
- T4-05 2:30 [Inter-laboratory Validation of an Enhanced Multiple-locus Variable Number Tandem Repeat Analysis \(MLVA\) Protocol for Subtyping Listeria monocytogenes from Food, Clinical and Environmental Sources](#)  
SALEEMA SALEH-LAKHA, Vanessa Allen, Jiping Li, Franco Pagotto, Joseph Odumeru, Eduardo Taboada, Burton Blais, Dele Ogunremi, Gavin Downing, Susan Lee, Anli Gao, Shu Chen, University of Guelph, Guelph, ON, Canada
- T4-06 2:45 [Evaluation of Several Drag Sampling Techniques for Isolation of Salmonella enterica from Agricultural Environments](#)  
BLEDAR BISHA, Jeffrey Chandler, Alma Perez-Mendez, Shannon Coleman, Kally Probasco, Douglas Marshall, Wanda Manley, Lawrence Goodridge, Colorado State University, Fort Collins, CO, USA
- 3:00 [Break](#)
- T4-07 3:30 [Comparison of Microbial Methods to Detect Fecal Coliforms, E. coli, and Salmonella spp. in Finished Compost](#)  
RUSSELL REYNNELLS, David Ingram, Cheryl Roberts, Richard Stonebraker, Patricia Millner, Manan Sharma, U.S. Department of Agriculture-BARC-EMFSL, Beltsville, MD, USA
- T4-08 3:45 [Automation in a High Throughput Food Processing Laboratory to Facilitate Rapid Turnaround and Regulatory Compliance](#)  
CHRISTINE PASZKO, Dustin Ebbing, Sandra Moore, Gene Bartholomew, Accelerated Technology Laboratories, Inc., West End, NC, USA
- T4-09 4:00 [A Comparison of a Nested Two-step qPCR and a Non-nested One-step RT-qPCR for Detection of Genogroup II Noroviruses in Diluted Clinical Fecal Samples](#)  
CLYDE MANUEL, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- T4-10 4:15 [Virus Titer and Suspension Matrix Impacts Estimates of Human Norovirus Infectivity following Thermal Inactivation by Enzyme Pre-Treatment with Proteinase K and RNase Prior to RT-qPCR](#)  
OLAMIDE AFOLAYAN, Jennifer Cannon, University of Georgia, Griffin, GA, USA
- T4-11 4:30 [Evaluation of Automating a Novel Biochemical Freshness Assay for Quantitative Measurement of ATP Degradation Products as a Potential Preventative Control of Fish Intended for the Human Food Market](#)  
WENDY GOODRICH, Larissa Balakireva, BioTek Instruments, Inc., Winooski, VT, USA
- T4-12 4:45 [A Simple qRT-PCR Method for Distinguishing Potentially Infectious and Inactivated Norovirus](#)  
DAVID KINGSLEY, U.S. Department of Agriculture-ARS-FSIT, Dover, DE, USA

S Symposia

R Roundtable

T Technicals

Blue Text – Developing Scientist Competitors

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TUESDAY MORNING  
JULY 30

(Posters will be on display 10:00 a.m. – 6:00 p.m.  
See details beginning on page 54)

**S17 Sanitation and Sanitary Design – A Holistic Approach**

*Charlotte Convention Center, Ballroom A*

**Organizers: Robert Hagberg, Paul Dix, Rolando González**  
**Convenor: Timothy Rugh**

- 8:30 Sanitary Design of Equipment – Current Issues and Overview  
RONALD SCHMIDT, University of Florida (Retired), Gainesville, FL, USA
- 9:00 Pay Me Now or Pay Me Later: Assessing the True Impact of Sanitary Design of Equipment and Facilities  
ROLANDO GONZÁLEZ, Bühler, Minneapolis, MN, USA
- 9:30 Sanitary Design from an EHEDG Viewpoint  
MARK MORGAN, Purdue University, West Lafayette, IN, USA
- 10:00 Break
- 10:30 Risk Assessment: Facility/ Equipment Sanitary Design... Impact on Food Safety and Cross-contamination Control  
JOHN HOLAHA, Campden BRI, Gloucestershire, United Kingdom
- 11:00 Crossing the Boundaries of Food Manufacturing Platforms/ Building a Food Safety Culture, an Equipment Manufacturer's Roadmap  
STEPHEN PERRY, AIOE, Reston, VA, USA
- 11:15 Crossing the Boundaries of Food Manufacturing Platforms, Designing a Sanitary Dryer and Building a Food Safety Culture  
STEVE BLACKOWIAK, Aeroglide, Raleigh, NC, USA
- 11:30 Case Study: A User's Perspective on Sanitary Design, Platform Based, Global Execution  
MARK DAVIS, PepsiCo, Chicago, IL, USA

**S18 Emerging Technologies for Detection and Characterization of Foodborne Pathogens**

*Charlotte Convention Center, Ballroom B*

**Organizers: Byron Brehm-Stecher, Arun Bhunia**  
**Convenors: Byron Brehm-Stecher, Arun Bhunia**

- 8:30 Bacterial Rapid Detection Using Optical Light Scattering Technology (BARDOT)  
ARUN BHUNIA, Purdue University, West Lafayette, IN, USA
- 9:00 Raman Biosensors for Multiplex Screening of Food Pathogens  
JOSEPH IRUDAYARAJ, Purdue University, West Lafayette, IN, USA
- 9:30 Hyperspectral Imaging for Detecting Foodborne Pathogens  
KURT LAWRENCE, U.S. Department of Agriculture-ARS, Athens, GA, USA
- 10:00 Break
- 10:30 Conductometric Biosensors for Food Safety  
EVANGELYN ALOCILJA, Michigan State University, East Lansing, MI, USA
- 11:00 Flow Cytometry for Rapid Detection of Foodborne Pathogens  
BYRON BREHM-STECHER, Iowa State University, Ames, IA, USA

- 11:30 Novel Bioaffinity Ligands for Pathogen Detection  
CHARLENE MELLO, U.S. Army Natick Soldier Research, Natick, MA, USA

**S19 U.S. Interagency Collaboration on Foodborne Illness Source Attribution**

*Charlotte Convention Center, 217A*

**Organizer: Michael Batz**  
**Convenor: Michael Batz**

- 8:30 Categorizing Foods from Outbreaks into Commodity Groups: An Improved Method  
KARA MORGAN, U.S. Food and Drug Administration, Washington, D.C., USA
- 9:00 Evaluation of Outbreak Data as Representative of Sporadic Illness Data for Purposes of Estimating Foodborne Illness Source Attribution  
NEAL GOLDEN, U.S. Department of Agriculture-FSIS, Washington, D.C., USA
- 9:30 Blending Attribution Estimates Derived from FoodNet Case-control Studies and Outbreak Data to Estimate the Proportion of *Salmonella* Enteritidis Illnesses Caused by Major Commodities  
DANA COLE, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 10:00 Break

**S20 Best Practices in Recall Management**

*Charlotte Convention Center, 217A*

**Organizer: Michael Roberson**  
**Convenor: Michael Roberson**

- 10:30 An Update of the FDA Reportable Foods Registry  
NICOLE NOLAN, U.S. Food and Drug Administration, College Park, MD, USA
- 11:00 Recall Best Management Practices  
MARK VARE, Inmar, Inc., Winston-Salem, NC, USA
- 11:20 Recall Best Management Practices in Distribution through Food Service  
JORGE HERNANDEZ, U.S. Foodservice, Rosemont, IL, USA
- 11:40 Recall Best Management Practices in Retail through Consumers  
JIM BADALATI, Stericycle, Indianapolis, IN, USA

**S21 Pathogen Environmental Sampling Plans – The Latest on What, How and Why**

*Charlotte Convention Center, 217BC*

**Organizer: Lorilyn Ledenbach**  
**Convenor: Lorilyn Ledenbach**

- 8:30 Proposed Environmental Sampling Requirements for FSMA  
JENNY SCOTT, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 9:00 Different Types of Sampling Plans for Different Product Types  
RICHARD BROUILLETTE, Mondelez, Bournville, United Kingdom
- 9:30 What Happens When an Environmental Positive is Found?  
THEODORA MORILLE-HINDS, Kellogg Company, Battle Creek, MI, USA
- 10:00 Break

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

**Check the Program Addendum for changes to the Program**

**S22 Food Safety in Paradise: Issues and Initiatives in the Caribbean***Charlotte Convention Center, 217D**Sponsored by the IAFP Foundation***Organizers: Linda Leake, Andrew Benson, Heather Farrell-Clarke****Convenors: Linda Leake, Andrew Benson**

- 8:30 Island Producers: Food Processing Constraints and Food Safety Challenges of Small and Medium Enterprises in the Caribbean  
NEELA BADRIE, University of the West Indies, St. Augustine, Trinidad and Tobago
- 9:00 Island Regulations: The Impact of the Food Safety Modernization Act on Caribbean Inspections, Audits, Imports and Exports  
PAMELA COKE-HAMILTON, Caribbean Export Development Agency, St. Michael, Barbados
- 9:30 Sandals on the Ground: Local Public Health Challenges, Including Indigenous Foods, Food Service and Tourism  
CRISTINA TIRADO, Pan American Health Organization/ World Health Organization, Rio de Janeiro, Brazil
- 10:00 Break

**S23 The Pacific Rim: Food Safety Issues and Initiatives***Charlotte Convention Center, 217D**Sponsored by the IAFP Foundation***Organizers: Isabel Walls, Linda Leake****Convenors: Isabel Walls, Linda Leake**

- 10:30 Asia-Pacific Economic Cooperation's Food Safety Efforts with the World Bank: Collaboration Highlights and Updates  
BRIAN BEDARD, World Bank, Washington, D.C., USA
- 11:00 Come Away to Paradise: Food Safety Challenges on the Tropical Pacific Rim Islands  
MOSES PRETRICK, Department of Health & Social Affairs, Palikir, Pohnpei, Micronesia
- 11:30 Pulling Out the Stops: Food Safety Barriers to Trade in the Pacific Rim  
PETER HOEJSKOV, World Health Organization, Suva, Fiji

**RT4 Careers in Food Safety: Traveling the Path of Those before Us***Charlotte Convention Center, 213A***Organizer: Aaron Pleitner****Convenors: Aaron Pleitner, Clyde Manuel**

- 8:30 Panelists:  
KENDRA NIGHTINGALE, Texas Tech University, Lubbock, TX, USA  
DAVID GOMBAS, United Fresh Produce Association, Washington, D.C., USA  
DAVID WHITE, U.S. Food and Drug Administration, Washington, D.C., USA
- 10:00 Break

**RT5 Codex Alimentarius at 50: Accomplishments and Challenges***Charlotte Convention Center, 213A***Organizers: Peter Ben Embarek, Caroline Smith DeWaal, Sarah Cahill****Convenors: Sarah Cahill, Caroline Smith DeWaal**

- 10:30 Panelists:  
KAREN HULEBAK, Resolutions Strategy, LLC, Warren, VA, USA  
SAMUEL GODEFROY, Health Canada, Ottawa, ON, Canada  
JEROEN FRIEDERICY, European Commission, Brussels, The Netherlands  
JENNY SCOTT, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

**RT6 Benefits of Food Safety Beyond Saving Lives***Charlotte Convention Center, 218-219***Organizer: Dale Grinstead****Convenor: Dale Grinstead**

- 8:30 Panelists:  
C. HAROLD KING, Chick-fil-A, Inc., Atlanta, GA, USA  
WILL DANIELS, Earthbound Farm, San Juan Bautista, CA, USA  
BENJAMIN WARREN, Land-O-Lakes, Arden Hills, MN, USA  
GILLIAN KELLEHER, Wegmans Food Markets, Inc., Rochester, NY, USA
- 10:00 Break

**RT7 Bridging Gaps between Scientific Assessment of Risk and Public Perception***Charlotte Convention Center, 218-219***Organizers: Barbara Blakistone, Benjamin Chapman****Convenors: Barbara Blakistone, Benjamin Chapman**

- 10:30 Panelists:  
GARY ACUFF, Texas A&M University, College Station, TX, USA  
CAROLINE SMITH-DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA  
LINDA LEAKE, Food Safety Consultant, Wilmington, NC, USA  
DONALD SCHAFFNER, Rutgers University, New Brunswick, NJ, USA  
DAVID GOMBAS, United Fresh Produce Association, Washington, D.C., USA  
DOUGLAS POWELL, Kansas State University, Manhattan, KS, USA

**T5 Technical Session 5 – Risk Assessment***Charlotte Convention Center, 213BC***Convenors: Yuhuan Chen, Kwang Cheol Jeong**

- T5-01 Using a Risk-based Approach to Evaluate Mitigation Options for Fresh Produce and Propose Microbiological Sampling Strategies in the Growing Field  
8:30 AMIR MOKHTARI, Stephen Beaulieu, Lee-Ann Jaykus, Evan Bowles, David Oryang, Sherri Dennis, RTI International, Washington, D.C., USA

**S** Symposia**R** Roundtable**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- T5-02 8:45 Assessing Soil Sample Methodology for *Salmonella enterica* and Enterohemorrhagic *Escherichia coli* Testing in Commercial Fields  
ADRIAN SBODIO, Gabriela Lopez-Velasco, Polly Wei, Eduardo Gutierrez-Rodriguez, Trevor Suslow, University of California-Davis, Davis, CA, USA
- T5-03 9:00 Modeling Survival of *Escherichia coli* O157:H7 in Lettuce as a Function of Chlorine Concentration  
Guiomar Denisse Posada-Izquierdo, FERNANDO PEREZ-RODRIGUEZ, Robin McKellar, Sonia G Carpintero, Francisco Membrives, Rosa Maria Garcia-Gimeno, Pascal Delaquis, Gonzalo Zurera, University of Cordoba, Cordoba, Spain
- T5-04 9:15 **Quantifying Bacterial Cross-contamination Rates between Fresh Cut Produce and Hands**  
DANE JENSEN, Rutgers University, New Brunswick, NJ, USA
- T5-05 9:30 **Quantitative Risk Assessment for *Escherichia coli* O157:H7 in Fresh-cut Lettuce**  
HAO PANG, Abani Pradhan, University of Maryland, College Park, MD, USA
- T5-06 9:45 Probabilistic Model of Norovirus Transmission during Handling and Preparation of Fresh Produce at School Food Services  
FERNANDO PEREZ-RODRIGUEZ, Junehee Kwon, Kevin Sauer, Ewen Todd, University of Cordoba, Cordoba, Spain
- 10:00 Break
- T5-07 10:30 Quantitative Exposure Model for the Transmission of Norovirus in Deli Sandwich Bars  
AMBROOS STALS, Liesbeth Jacxsens, Leen Baert, Els Van Coillie, Mieke Uyttendaele, Ghent University, Ghent, Belgium
- T5-08 10:45 WITHDRAWN
- T5-09 11:00 **Prediction of *Bacillus weihenstephanensis* Acid Resistance Using Gene Expression Quantification as Molecular Biomarkers**  
NOEMIE DESRIAC, Louis Coroller, Daniele Sohier, Florence Postollec, ADRIA Development, Quimper, France
- T5-10 11:15 An Expert-based Multi-criteria Ranking of Global Foodborne Parasites  
MICHAEL BATZ, Lucy Robertson, Joke van der Giessen, Brent Dixon, Marisa Caiipo, Mina Kojima, Sarah Cahill, University of Florida, Gainesville, FL, USA
- T5-11 11:30 Development of a Mobile-based and Web-based Authentication Services Software for Imported Food Safety  
ZACCHAEUS OMOGBA DEGUN, Covenant University, Ota, Nigeria
- T5-12 11:45 Modeling the Impact of Climatic Variables on *Vibrio parahaemolyticus* Outbreaks in Taiwan (2000-2011)  
HUI-JU CHI, Hsin-I Hsiao, National Taiwan Ocean University, Keelung, Taiwan
- T6 Technical Session 6 – Produce**  
*Charlotte Convention Center, 213D*  
**Convenors: Kaiping Deng, Roy Costa**
- T6-01 8:30 Foodborne Viruses: Integration of Viral Risk in the HACCP Plan of a Food Company  
FABIENNE LOISY, Sandrine Hattet, Benoit Lebeau, CEERAM, La Chapelle-Sur-Erdre, France
- T6-02 8:45 Role of Curli and Contamination Level on *Escherichia coli* O157:H7 Internalization into Organic Spinach Plants Grown on Hydroponics and in Soil  
DUMITRU MACARISIN, Jitu Patel, Vijay Sharma, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- T6-03 9:00 Survival of Generic *Escherichia coli* and Surrogate *Escherichia coli* O157:H7 in Manure-amended Soils  
JUNE DEGRAFT-HANSON, Wilbert Long, Natalia Macarasin, David Clark, Corrie Cotton, Fawzy Hashem, Manan Sharma, Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA
- T6-04 9:15 Survival of *Salmonella*, *Escherichia coli* O157:H7, Non-O157 Shiga Toxin-producing *Escherichia coli*, and Potential Surrogate Bacteria in Soil as Affected by the Addition of Fast Pyrolysis-generated Switchgrass Biochar  
JOSHUA GURTLER, Akwasi Boateng, Rebecca Bailey, David Douds, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- T6-05 9:30 Effects of Agricultural Practices on *Salmonella* Contamination in Tomato Fields  
GANYU GU, Jie Zheng, Christine Waldenmaier, Mark Reiter, Steven Rideout, Virginia Tech, Painter, VA, USA
- T6-06 9:45 **Identifying Field-level Risk Factors Associated with *Listeria monocytogenes* and *Salmonella* Contamination in Produce Fields**  
LAURA STRAWN, Yrjo Grohn, Randy Worobo, Elizabeth Bihn, Martin Wiedmann, Cornell University, Ithaca, NY, USA
- 10:00 Break
- T6-07 10:30 Survival of *Listeria innocua*, *Listeria monocytogenes* and *Salmonella enterica* on Watermelon Surfaces during Storage and Postharvest Washing  
Gabriela Lopez-Velasco, Trudy Pham, Polly Wei, Alejandro Tomas-Callejas, Adrian Sbodio, TREVOR SUSLOW, University of California-Davis, Davis, CA, USA
- T6-08 10:45 **Survival of *Salmonella enterica* in Manure Dust on Spinach Leaves**  
RUTH ONI, Manan Sharma, Shirley Micallef, Robert Buchanan, University of Maryland, College Park, MD, USA
- T6-09 11:00 **Airborne Transport of Foodborne Pathogens from Bovine Manure to Lettuce and Tomato**  
JULIA DENIRO, Douglas Doohan, Kenneth Shenge, Michael Kauffman, Sanja Ilic, Jeffrey LeJeune, The Ohio State University, Wooster, OH, USA
- T6-10 11:15 Impact of Extreme Climatic Events on Microbial Safety of Leafy Greens: Flooding  
IRENE CASTRO-IBÁÑEZ, Maria I. Gil, Ana Allende, CEBAS-CSIC, Murcia, Spain
- T6-11 11:30 Assessing the Microbial Risk of Soil, Irrigation Water, and Farm Worker Hands to Produce Contamination on Farms and Packing Sheds Near the U.S.-Mexico Border  
JUAN LEON, Faith Bartz, Anna Fabiszewski de Aceituno, Jacqueline Lickness, Alice Parish, Norma Heredia, Santos Garcia, Lee-Ann Jaykus, Emory University, Atlanta, GA, USA
- T6-12 11:45 **Impact of Riparian Forests on the Prevalence of Non Pathogenic *Escherichia coli* Contamination in Produce Fields**  
GINA RYAN, Steven Warchocki, Laura Strawn, Martin Wiedmann, Peter Bergholz, Cornell University, Ithaca, NY, USA

S Symposia

R Roundtable

T Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

**TUESDAY AFTERNOON  
JULY 30**

*(Posters will be on display 10:00 a.m. – 6:00 p.m.  
See details beginning on page 54)*

**IAFP Business Meeting – 12:15 p.m. – 1:00 p.m.**  
*Charlotte Convention Center, 213A*

**S24 Consumer Food Safety Behaviors: How to Change Them and How to Know When We've Done It**

*Charlotte Convention Center, Ballroom A*

*Sponsored by the IAFP Foundation*

**Organizers: Judy Harrison, Amarat Simonne, Tori Stivers**

**Convenors: Doris D'Souza, Elizabeth Andress**

- 1:30 The "General Public" Does Not Exist; Segment Your Audience for Effective Communication  
KAREN HILYARD, University of Georgia, Athens, GA, USA
- 2:00 Food Safety Campaigns: Why are They Often Ignored by Consumers and What Can We Do about It?  
DEBBIE CLAYTON, Cardiff Metropolitan University, Cardiff, Wales
- 2:30 Best Practices for Message Design and Delivery  
LINDA ALDOORY, University of Maryland, College Park, MD, USA
- 3:00 Break
- 3:30 Effectively Communicating with Consumers about Food Recalls  
WILLIAM HALLMAN, Rutgers Food Policy Institute, New Brunswick, NJ, USA
- 4:00 Can We Use Social Marketing to Change Consumer Food Safety Practices?  
MARY BRENNAN, Newcastle University, Newcastle uponTyne, United Kingdom
- 4:30 Evaluating Food Safety Education Efforts and Measuring Impact  
DAVID C. DIEHL, University of Florida, Gainesville, FL, USA

**S25 Global Lab Capacity Building for Ensuring Food Safety**

*Charlotte Convention Center, Ballroom B*

*Sponsored by the IAFP Foundation*

**Organizers: Pamela Wilger, George Wilson, Keith Lampel**

**Convenors: Pamela Wilger, George Wilson, Keith Lampel**

- 1:30 Global Laboratory Initiatives and Approaches to Enhance Food Safety  
CARL SCIACCHITANO, U.S. Food and Drug Administration, Silver Springs, MD, USA
- 2:00 What Worked and Did Not in Bangladesh: Lessons Learned for the Future – Asian-Pacific  
DEON MAHONEY, Food and Agriculture Organization of the United Nations, Farrer, Australia
- 2:30 Testing Challenges in the Laboratory within the Developing World: Technology, Training, Government Regulations  
MICHAEL ROBACH, Cargill, Minneapolis, MN, USA
- 3:00 Break
- 3:30 Food Safety Capacity Building: A Global Public Good  
BRIAN BEDARD, World Bank, Washington, D.C., USA

- 4:00 Impact on Lab Capacity Building in Latin or South America  
MARIA TERESA DESTRO, University of Sao Paulo, Sao Paulo, Brazil
- 4:30 Turkey as a Strategically Located in Europe and the Middle East  
DILEK HEPERKAN, Istanbul Technical University, Istanbul, Turkey

**S26 *Listeria monocytogenes* in Retail Delis – Prevalence, Transmission and Control Strategies**

*Charlotte Convention Center, 217A*

**Organizers: Haley Oliver, Thomas Ford**

**Convenors: Haley Oliver, Thomas Ford**

- 1:30 *Listeria monocytogenes* in Retail Deli Environments – Prevalence, Persistence and Control  
HALEY OLIVER, Purdue University, West Lafayette, IN, USA
- 2:00 Tracking Cross-contamination in a Mock Retail Deli  
RENEE BOYER, Virginia Tech, Blacksburg, VA, USA
- 2:30 Update on the Interagency *Listeria monocytogenes* Risk Assessment Model  
JANELL KAUSE, U.S. Department of Agriculture-FSIS, Manassas, VA, USA
- 3:00 Break
- 3:30 Successes and Challenges of Deep Cleaning Delis  
THOMAS FORD, Ecolab, Greensboro, NC, USA
- 4:00 ATP as a Verification and Education Tool in Retail Deli Systems  
SUSAN HAMMONS, Purdue University, West Lafayette, IN, USA
- 4:30 Initiatives and Best Practices for *Listeria monocytogenes* Control – An Update  
HILARY THESMAR, Food Marketing Institute, Arlington, VA, USA

**S27 Global Practices That Form a Multiple Hurdle Approach to *Salmonella* and *Campylobacter* Reductions in Poultry**

*Charlotte Convention Center, 217BC*

*Sponsored by the University of Arkansas Center of Excellence for Poultry Science and the IAFP Foundation*

**Organizers: Jeffrey Farber, John Marcy**

**Convenors: David Harris, John Marcy**

- 1:30 U.S. Broiler Interventions – What's Working  
SCOTT STILLWELL, Tyson Foods, Inc., Springdale, AR, USA
- 2:00 Let's Talk Turkey Interventions, U.S.  
ALICE JOHNSON, Butterball, LLC, Mt. Olive, NC, USA
- 2:30 Latest Canadian Initiatives on *Salmonella* in Eggs and Poultry  
JEFFREY FARBER, Health Canada, Ottawa, ON, Canada
- 3:00 Break
- 3:30 Poultry Interventions and *Salmonella/Campylobacter* Control in Brazil  
MARIA TERESA DESTRO, University of Sao Paulo, Sao Paulo, Brazil
- 4:00 Poultry Interventions and *Salmonella/Campylobacter* Control in the United Kingdom  
LESLEY LARKIN, Animal Health and Veterinary Laboratories Agency, London, United Kingdom
- 4:30 Poultry Interventions and *Salmonella/Campylobacter* Control in New Zealand  
SHARON WAGENER, Ministry for Primary Industries, Wellington, New Zealand and ROY BIGGS, Tegel Foods Ltd., Auckland, New Zealand

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

**S28** **Discussing Food Safety Risks, Controls and Challenges Associated with Farmers' Markets***Charlotte Convention Center, 217D***Organizers: Ronald Schmidt, Benjamin Chapman**  
**Convenors: Ronald Schmidt, Renee Boyer**

- 1:30 Growth of Farmers' Markets in the U.S  
VELMA LAKINS, U.S. Department of Agriculture-AMS, Riverdale, MD, USA
- 2:00 Challenges in Regulating Products Sold at Farmers' Markets  
CLAUDIA COLES, Washington Department of Agriculture, Olympia, WA, USA
- 2:30 Food Safety Practices at Farmers' Markets in Georgia, South Carolina and Virginia  
JUDY HARRISON, University of Georgia, Athens, GA, USA
- 3:00 Break
- 3:30 Surveying Microbiological Quality of Foods at Farmers' Markets  
MARISA BUNNING, Colorado State University, Fort Collins, CO, USA USA
- 4:00 Evaluation, Development and Implementation of an Education Curriculum to Enhance Food Safety Practices at North Carolina Farmers' Markets  
SARAH SMATHERS, North Carolina State University, Raleigh, NC, USA
- 4:30 Implementing Food Safety at a Farmers' Market: A Manager's Perspective  
ERIN JOBE, Carrboro Farmers' Market, Carrboro, NC, USA

**RT8** **Validation of Process Control in a HACCP System: Practical Application***Charlotte Convention Center, 218-219***Organizers: Manpreet Singh, James Dickson, Gary Acuff**  
**Convenor: Manpreet Singh**

- 1:30 Panelists:  
MARGARET HARDIN, IEH Laboratories & Consulting, Lake Forest Park, WA, USA  
JAMES DICKSON, Iowa State University, Des Moines, IA, USA  
GARY ACUFF, Texas A&M University, College Station, TX, USA  
HARSHAVARDHAN THIPPAREDDI, University of Nebraska-Lincoln, Lincoln, NE, USA
- 3:00 Break

**RT9** **Microbial and Chemical Hazards in Veal: Identification of Contributing Factors, Data Gaps and Solutions***Charlotte Convention Center, 218-219**Sponsored by the IAFP Foundation***Organizer: John Johnston**  
**Convenor: John Johnston**

- 3:30 Panelists:  
PETER EVANS, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA  
ADNAN AYDIN, American Veal Association, Gladstone, MO, USA  
JOSEPH BOSILEVAC, U.S. Department of Agriculture-ARS, Clay Center, NE, USA  
GARY ACUFF, Texas A&M University, College Station, TX, USA

PHILIP BRONSTEIN, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

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

**T7** **Technical Session 7 – Beverage and Water, Dairy, Non-microbial Food Safety, Risk Assessment***Charlotte Convention Center, 213BC***Convenors: Ruth Petran, Alejandro Amezcua**

- T7-01  
1:30 Assessment of Microbial Quality of Cooked Ready-to-Eat Street Foods Vended in Calabar Metropolis, Nigeria  
CHRISTINE IKPEME-EMMANUEL, Chidozie Anyanwu, University of Calabar, Calabar, Nigeria
- T7-02  
1:45 Optimal Food Safety Sampling under a Budget Constraint  
MARK POWELL, U.S. Department of Agriculture-ORACBA, Washington, D.C., USA
- T7-03  
2:00 Quantitative Risk Assessment for Campylobacteriosis in New Zealand by the Bayesian Approach  
ALI AL-SAKKAF, LBRL Food Safety Consultants, Palmerston North, New Zealand
- T7-04  
2:15 **Modeling the Influence of Temperature, Water Activity and Water Mobility on the Persistence of *Salmonella* in Low-moisture Food**  
**SOFIA SANTILLANA FARAKOS, Joseph Frank, Donald Schaffner, University of Georgia, Athens, GA, USA**
- T7-05  
2:30 Risk Assessment of *Escherichia coli* O157 in Burgers Made from Australian Beef Trim  
ANDREAS KIERMEIER, John Sumner, Ian Jenson, SA Research & Development Institute, Adelaide, Australia
- T7-06  
2:45 Comparison in the Reduction of Patulin Content under Different High Pressure Processing Conditions with the Use of Hydrogen Peroxide  
HEYING HAO, Ting Zhou, Keith Warriner, University of Guelph, Guelph, ON, Canada
- 3:00 Break
- T7-07  
3:30 Biofilm Formation and Cell Invasion among Environmentally Persistent *Escherichia coli* Isolates from South Africa Watersheds  
MICKY WILSON, Debora Esposito, Tarren Seale, Sarah MacRae, Stephanus Venter, Slavko Komarnytsky, North Carolina State University, Kannapolis, NC, USA
- T7-08  
3:45 Survival of *Listeria monocytogenes* in Three Dairy Powders  
CHANTAL NDE, Jessie Heidenreich, LoralyN Ledenbach, Kraft Foods, Glenview, IL, USA
- T7-09  
4:00 Behavioral Beliefs of Consumers Who Consume Either Pasteurized or Unpasteurized Milk: A Preliminary Study  
LYDIA MEDEIROS, Janet Buffer, Jeffrey LeJeune, The Ohio State University, Columbus, OH, USA
- T7-10  
4:15 Food Safety Certification of a Dairy Farm with ISO 22000 International Standard  
Christophe Boulais, Juan Jose Romo, Alfredo Luna, Carmen Garcia, FABRICE PELADAN, Danone Research, Palaiseau, France
- T7-11  
4:30 **Characterization of the Microbial Population Present on a Short Ripening Mexican Artisanal Cheese**  
**ALEJANDRO ALDRETE-TAPIA, Fernando Mejia-Ruiz, Meyli Escobar-Ramirez, Gerardo Nava, Sofia Arvizu-Medrano, Mark Tamplin, Montserrat Iturriaga, Universidad Autónoma de Queretaro, Queretaro, Mexico**
- T7-12  
4:45 **Concentration of Biogenic Amines in Rainbow Trout (*Oncorhynchus mykiss*) Preserved in Ice and Its Relationship with Physico-chemical Parameters of Quality**  
**Bruna Rodrigues, Thiago Alvares, Marion Costa, Guilherme Sampaio, Cesar La Torre, CARLOS CONTE-JUNIOR, Federal Fluminense University, Rio de Janeiro, Brazil**

**S** Symposia**R** Roundtable**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

## T8 Technical Session 8 – Pathogens, Produce

Charlotte Convention Center, 213D

Convenors: Marilyn Erickson, Elizabeth Bihn

- T8-01 1:30 Multistate Foodborne Disease Outbreaks Associated with Raw Tomatoes, United States, 1973–2010: A Recurring Public Health Problem  
SARAH BENNETT, Kellie Littrell, Thomas A. Hill, Michael Mahovic, Casey Barton Behraves, Centers for Disease Control and Prevention, Atlanta, GA, USA
- T8-02 1:45 Process Analysis of Chlorine Replenishment of Lettuce Washing Water  
BIN ZHOU, Yaguang Luo, Xiangwu Nou, Patricia Millner, University of Maryland, College Park, MD, USA
- T8-03 2:00 Enhanced Reduction of Microbial Load in Produce Wash Water Using a Non-oxidizing Disinfectant  
COLIN FRICKER, CRF Consulting Ltd., Reading, United Kingdom
- T8-04 2:15 Quantitative Transfer of *Salmonella* during Commercial Slicing of Tomatoes as Impacted by Multiple Processing Variables  
HAIQIANG WANG, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- T8-05 2:30 Inactivation of Aerobic Mesophilic Bacteria and *Escherichia coli* K-12 on Cantaloupe Rind Surface Using Wet Steam Treatments  
DIKE UKUKU, David Geveke, Lee Chau, Andrew Bigley, U.S. Department of Agriculture-ERRC-ARS, Wyndmoor, PA, USA
- T8-06 2:45 Commercial Thermal Process for Inactivating *Salmonella* Poona on Surfaces of Whole Fresh Cantaloupes  
BASSAM ANNOUS, Angela Burke, Joseph Sites, John Phillips, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- 3:00 Break
- T8-07 3:30 Effectiveness of Calcium Hypochlorite on Bacterial and Viral Contamination of Alfalfa Seeds  
QING WANG, Kalmia Kniel, University of Delaware, Newark, DE, USA
- T8-08 3:45 Thermal Inactivation of Human Norovirus Surrogates in Spinach  
HAYRIYE BOZKURT, Doris D'Souza, P. Michael Davidson, University of Tennessee, Knoxville, TN, USA
- T8-09 4:00 Extraction of Hepatitis A Virus from Seawater with Zeolite Granules  
JIEMIN CORMIER, Marlene Janes, Louisiana State University, Baton Rouge, LA, USA
- T8-10 4:15 Population Dynamics and Mutability of *Listeria monocytogenes* Derived from the Food Chain  
JOVANA KOVACEVIC, Christy-Lynn Peterson, Matthew Gilmour, Taurai Tasara, Kevin Allen, University of British Columbia, Vancouver, BC, Canada
- T8-11 4:30 Isolation and Molecular Identification of *Cronobacter* spp. from Non-dairy Foods in Indonesia  
RATIH DEWANTI-HARIYADI, Fransiska Hamdani, Sri Hendrastuti Hidayat, Bogor Agricultural University, Bogor, Indonesia
- T8-12 4:45 Comparison of Four Different Methods for Detection of Shiga Toxin-producing *Escherichia coli* (STEC) in Environmental Samples  
SOOHYOUN AHN, Tyler Austin, Shuang Wu, David Gilmore, Donald Kennedy, University of Florida, Gainesville, FL, USA

S Symposia

R Roundtable

T Technicals

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## Join bioMérieux at the 12<sup>th</sup> Annual Scientific Symposium!

### One Health Initiative: Working together from Farm to Fork to Provide Nutritious and Safe Foods

Monday, July 29 at 7:00 p.m.

bioMérieux Welcomes Moderator, Gary Acuff, PhD

The One Health Initiative is a worldwide strategy of expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment. Having access to food that is nutritious, affordable and safe, is a central component of the Initiative. This 12th annual bioMérieux IAFP scientific symposium will focus on the *One Health Initiative* with discussions on food safety trends, the historical and evolving impact of zoonoses on food safety, the use of attribution data to improve intervention strategies to reduce *Salmonella* contamination in meat and poultry and bioMérieux's active support of the One Health concept for the past 20 years.

#### One Health: Global Trends in Food Safety

Frank Yiannas, Vice-President, Wal-Mart

#### One Health: Past, Current, and Future Role of Zoonoses in Production of Microbiologically Safe Food

Martin Wiedmann, Professor, Cornell University

#### One Health: Can Attribution Data be Used to Improve the Meat and Poultry Industry's Strategies to Control *Salmonella*?

Betsy Booren, Chief Scientist, American Meat Institute Foundation

#### One Health: A 20 Year Legacy of bioMérieux

Mark Mackowiak, President and CEO of bioMérieux North America

For more information visit:

[www.biomerieux-usa.com/iafp2013](http://www.biomerieux-usa.com/iafp2013)

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**WEDNESDAY MORNING  
JULY 31**

*(Posters will be on display 9:00 a.m. – 3:00 p.m.  
See details beginning on page 61)*

**S29 Assessing the Safety of Water Used in the Production of Fresh and Minimally Processed Produce**

*Charlotte Convention Center, Ballroom A  
Sponsored by ILSI South Africa, Veg-i-Trade and the IAFP Foundation*

**Organizers: Pratima Jasti, Mieke Uyttendaele  
Convenor: Pratima Jasti**

- 8:30 Fresh Produce and Microbial Safety Concerns in the Global World  
MIEKE UYTTENDAELE, Ghent University, Ghent, Belgium
- 9:00 Dealing with Microbial Hazards Transmitted to Fresh Produce Via Water: The South African Perspective  
LISE KORSTEN, University of Pretoria, Pretoria, South Africa
- 9:30 Microbial Status of Irrigation Water and Risk Factors for Transmission of Pathogens to Leafy Greens in EU  
ANA ALLENDE, CEBAS-CSIC, Murcia, Spain
- 10:00 Break
- 10:30 Microbial Quality of Waters and Alternatives to Chlorine for Sanitation Used in Postharvest Processes  
MABEL GIL, CEBAS-CSIC, Murcia, Spain
- 11:00 Microbial Risk Assessment of Water Used in Fresh Produce Production and Processing  
LIESBETH JACXSENS, University of Ghent, Ghent, Belgium
- 11:30 Short Round-up on Data Gaps and Concluding Discussion Session on Assessing the Safety of Water Used in the Fresh Produce Production  
MIEKE UYTTENDAELE, Ghent University, Ghent, Belgium

**S30 The Next Risk Analysis Challenge: Linking HACCP and Risk Assessments**

*Charlotte Convention Center, Ballroom B  
Sponsored by USDA-NIFA and the IAFP Foundation  
Organizers: Robert Buchanan, Elizabeth Williams  
Convenors: Donald Schaffner, Elizabeth Williams*

- 8:30 HACCP, the Food Industry's Food Safety Risk Management System  
ALEJANDRO AMEZQUITA, Unilever, Sharnbrook, United Kingdom
- 9:00 How New Risk Assessment Modeling Tools Can Help Overcome HACCP Limitations  
LAURENT GUILLIER, ANSES, Paris, France
- 9:30 HACCP from the Perspective of Systems Engineering  
JOHN HELFERICH, MIT, Rockport, MA, USA
- 10:00 Break
- 10:30 Microbial Risk Management Metrics: A Framework for Incorporating Risk Analysis into HACCP  
ROBERT BUCHANAN, University of Maryland, College Park, MD, USA

- 11:00 Examples of Risk Assessment Derived HACCP Plans  
ELIZABETH WILLIAMS, University of Maryland, College Park, MD, USA
- 11:30 Incorporating Risk-based Concepts to Food Safety Management: HACCP-like Approaches and Beyond  
LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA

**S31 Farm to Fork Cantaloupe Risks and Interventions**

*Charlotte Convention Center, 217A  
Organizers: Dale Grinstead, Yale Lary, Jr.  
Convenors: Dale Grinstead, Yale Lary, Jr.*

- 8:30 Best Grower Practices to Prevent Contamination  
TREVOR SUSLOW, University of California-Davis, Davis, CA, USA
- 9:15 Best Fresh-cut Processor Practices to Prevent Contamination  
STACY DRAPER, Sun-Rich Fresh Foods, Corona, CA, USA
- 9:45 Best Distributor Practices to Prevent Contamination  
DAVE PODESTA, Sysco Corporation, Chandler, AZ, USA
- 10:00 Break

**S32 Food Safety Sampling, Risk Assessment and Regulatory Standards: Arbitrary or Science-Based?**

*Charlotte Convention Center, 217A  
Sponsored by the IAFP Foundation  
Organizers: Marcel Zwietering, Joshua Gurtler  
Convenors: Marcel Zwietering, Joshua Gurtler*

- 10:30 Microbial Distributions and Effects on Sampling Plans  
MARCEL ZWIETERING, Wageningen University, Wageningen, The Netherlands
- 11:00 International Criteria for Setting Food Safety Performance Standards (Codex & Food Safety Risk Management Metrics)  
SEBASTIAN HIELM, Finnish Ministry of Agriculture and Forestry, Helsinki, Finland
- 11:30 Risk Modeling to Support Regulations for Reducing the Burden and Cost of Foodborne Diseases  
ARIE HAVELAAR, Dutch National Institute for Public Health and the Environment, Bilthoven, The Netherlands

**S33 Food Defense Revisited: What Do We Need to Know about Fraud, Counterfeiting and Tampering?**

*Charlotte Convention Center, 217BC  
Sponsored by the IAFP Foundation  
Organizers: Faye Feldstein, Bill Ramsey  
Convenors: Faye Feldstein, Bill Ramsey*

- 8:30 The Sociology and Criminology of Food Fraud: What is Going on out There?  
JOHN SPINK, Michigan State University, Okemos, MI, USA
- 9:00 How Does Food Fraud Impact the Processing Industry?  
BOB FAHY, Kraft Foods, Chicago, IL, USA
- 9:30 Insight from the FDA Office of Criminal Investigations  
GEORGE HUGHES, U.S. Food and Drug Administration, Rockville, MD, USA
- 10:00 Break

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

**Check the Program Addendum for changes to the Program**

**S34** **Enhancing the Value of Restaurant Inspections to Drive Food Safety Improvements**

*Charlotte Convention Center, 217BC*

**Organizers: Ann Marie McNamara, Ruth Petran**  
**Convenor: Ann Marie McNamara**

- 10:30 Strategies for Driving Improvements  
RUTH PETRAN, Ecolab Inc., Eagan, MN, USA
- 11:00 Communicating Food Safety Risks and Hazards to Food Inspectors and Retail Personnel  
BENJAMIN CHAPMAN, North Carolina State University, Raleigh, NC, USA
- 11:30 Enhancing the Value of Restaurant Inspections to Drive Food Safety Improvements  
ANN MARIE MCNAMARA, Jack in the Box, Inc., San Diego, CA, USA

**S35** **Prevention and Control of *Listeria monocytogenes* Contamination of Cheese**

*Charlotte Convention Center, 217D*

*Sponsored by the IAFP Foundation*

**Organizers: Michael Roberson, Benjamin Silk**  
**Convenor: Don Zink**

- 8:30 Epidemiology of Listeriosis Associated with Cheese  
BENJAMIN SILK, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 9:00 Multistate Listeriosis Outbreak Due to Imported Ricotta Salata and Cross-contamination of Cut and Repackaged Cheeses  
KATHERINE HEIMAN, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 9:30 Cheese Processor's Perspective on Control of *Listeria monocytogenes* in Cheese  
LORALYN LEDENBACH, Kraft Foods, Glenview, IL, USA
- 10:00 Break
- 10:30 Sourcing Safe Cheese for Retail Cheese Programs  
MICHAEL ROBERSON, Publix Super Markets, Inc., Lakeland, FL, USA
- 11:00 FDA Perspective on Control of *Listeria monocytogenes* in Cheese  
OBIANUJU NSOFOR, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 11:30 Question and Answer with Presenters  
BENJAMIN SILK, Centers for Disease Control and Prevention, Atlanta, GA, USA

**RT10** **Changes in Academic Food Safety Microbiology Teaching Laboratories: Are We Throwing the Baby Out with the Bathwater?**

*Charlotte Convention Center, 218-219*

*Sponsored by the IAFP Foundation*

**Organizer: Lee-Ann Jaykus**  
**Convenors: Lee-Ann Jaykus, Matthew Taylor**

- 8:30 Panelists:  
FRANCISCO DIEZ-GONZALEZ, University of Minnesota, St. Paul, MN, USA  
KELLY STEVENS, General Mills, Golden Valley, MN, USA

- RONALD SMILEY, U.S. Food and Drug Administration-ORA, Jefferson, AR, USA
- ROBERT NOBLES, Texas A&M University, College Station, TX, USA
- RUTH GYURE, Western Connecticut State College, Danbury, CT, USA

10:00 Break

**RT11** **Call to Action – Let's Put Water on a HACCP Plan**

*Charlotte Convention Center, 218-219*

*Sponsored by the IAFP Foundation*

**Organizers: Wendy Maduff, Susan McKnight**  
**Convenor: Wendy Maduff**

- 10:30 Panelists:  
KAARIN GOODBURN, Chilled Food Association UK, Kettering, United Kingdom  
GORDON HAYBURN, QMI-SAI Global, Toronto, ON, Canada  
TREVOR SUSLOW, University of California-Davis, Davis, CA, USA  
JOSEPH ODUMERU, Ministry of the Environment, Etobicoke, ON, Canada  
DEAN DAVIDSON, Consultant/ILSI, Arlington, VA, USA  
DON ZINK, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA  
JOSEPH COTRUVUO, Joseph Cotruvo & Associates LLC, Washington, D.C., USA

**T9** **Technical Session 9 – Epidemiology**

*Charlotte Convention Center, 213BC*

**Convenors: Michelle Lovett, Wade Yang**

- T9-01 The Long-term Health Outcomes of *Salmonella* Infections: What Do We Know?  
8:30 ROBERT HERRICK, Barbara Kowalczyk, University of Cincinnati College of Medicine, Cincinnati, OH, USA
- T9-02 Risks of Long-term Health Outcomes of Shiga Toxin-producing *Escherichia coli* Infection: An Epidemiologic Review  
8:45 Evan Henke, BARBARA KOWALCYK, Center for Foodborne Illness, Raleigh, NC, USA
- T9-03 A Review of Long-term Health Outcomes following Listeriosis Infection  
9:00 Alida Sorrenson, BARBARA KOWALCYK, Center for Foodborne Illness, Raleigh, NC, USA
- T9-04 Long-term Health Effects of *Campylobacter* Infection: A Systematic Literature Review  
9:15 Elizabeth Allen, BARBARA KOWALCYK, Center for Foodborne Illness, Raleigh, NC, USA
- T9-05 Applying Source Attribution to Elucidate the Trend of Human *Campylobacter* Infections  
9:30 Ken Forbes, Frances Colles, Ovidiu Rotariu, Anne Thomson, Marion Macrae, Iain Ogden, Martin Maiden, NORVAL STRACHAN, University of Aberdeen, Aberdeen, United Kingdom
- T9-06 What Was Fishy about the Sushi? The 2012 *Salmonella* Bareilly Cluster Investigation, the Texas Experience  
9:45 JULIE BORDERS, Venessa Cantu, Texas Department State Health Service, Austin, TX, USA
- 10:00 Break

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- T9-07 10:30 Source Attribution for Human Cases of Shiga Toxin-producing *Escherichia coli* in New Zealand  
PATRICIA JAROS, Donald Campbell, Adrian Cookson, Steve Hathaway, Deborah Prattley, Nigel French, Massey University, Palmerston North, New Zealand
- T9-08 10:45 Assessing Bacterial Contamination in Ground Beef from the Saskatchewan Retail Market  
ANATOLIY TROKHMYCHUK, Cheryl Waldner, Sheryl Gow, Bonnie Chaban, Janet E. Hill, University of Saskatchewan, Saskatoon, SK, Canada
- T9-09 11:00 The Use of Global Trade Item Numbers (GTIN) in the Investigation of a *Salmonella* Newport Outbreak Associated with Blueberries  
BENJAMIN MILLER, Carrie Rigdon, Trisha Robinson, Craig Hedberg, Kirk Smith, Minnesota Department of Agriculture, St. Paul, MN, USA
- T9-10 11:15 Generic *Escherichia coli* Contamination of Spinach at the Preharvest Level as Affected by Farm Management and Environmental Factors  
SANGSHIN PARK, Sarah Navratil, Ashley Gregory, Arin Bauer, Indumathi Srinath, Mikyoung Jun, Barbara Szonyi, Kendra Nightingale, Juan Anciso, Renata Ivanek, Texas A&M University, College Station, TX, USA
- T9-11 11:30 A Comparison of Food Vehicles Implicated in Outbreaks and United States Food Consumption Patterns, 2005-2010  
LaTonia Richardson, Shacara Johnson, DANA COLE, Centers for Disease Control and Prevention, Atlanta, GA, USA
- T9-12 11:45 Revised Estimates of the Burden of Foodborne Illness in Canada  
M. KATE THOMAS, Regan Murray, Logan Flockhart, Katarina Pintar, Frank Pollari, Aamir Fazil, Andrea Nesbitt, Barbara Marshall, Public Health Agency of Canada, Guelph, ON, Canada
- T10 Technical Session 10 – Pathogens**  
*Charlotte Convention Center, 213D*  
**Convenors: Manan Sharma, Bob Wynne**
- T10-01 8:30 *Salmonella* Survival and Differential Expression of Membrane-associated Genes in a Low Water Activity Food  
WEI CHEN, David Golden, Faith Critzer, University of Tennessee, Knoxville, TN, USA
- T10-02 8:45 Roles of Fatty Acid Composition and Cell Membrane Fluidity in Thermal Resistance of *Salmonella* after Desiccation  
XIAOWEN FU, Erica Fealko, Lauren Jackson, Mary Lou Tortorello, Haiping Li, Institute for Food Safety and Health, Bedford Park, IL, USA
- T10-03 WITHDRAWN
- T10-04 9:15 The Long-term Survival of *Salmonella* Cells Adhered to Stainless Steel under Various Environmental Conditions and Their Resistance to Disinfectants  
EDYTA MARGAS, John Holah, Beatrice Conde-Petit, Christine Dodd, The University of Nottingham, Sutton Bonington, United Kingdom
- T10-05 9:30 Differentiation of Closely Related *Salmonella enterica* Serotype Heidelberg Isolates by Comparative Genomic Analysis  
MARIA HOFFMANN, Shaohua Zhao, James Pettengill, Yan Luo, Tim Muruvanda, Jason Abbott, Sherry Ayers, Jason Folster, Marc Allard, Jianghong Meng, Eric Brown, Patrick McDermott, University of Maryland, College Park, MD, USA
- T10-06 9:45 Fate of Infiltrated *Salmonella* Cells in Tomatoes during Storage  
BIN ZHOU, Yaguang Luo, Xiangwu Nou, Yang Yang, Yunpeng Wu, Qin Wang, University of Maryland, College Park, MD, USA
- 10:00 Break
- T10-07 10:30 Autoinducer-2 Signaling Molecules Produced by *Pediococcus* Suppress Growth and Virulence Gene Regulation in *Salmonella*  
NAN ZHANG, Sandra Diaz-Sanchez, Kasey Estenson, Sean Pendleton, Francisco Gonzalez-Gil, Irene Hanning, University of Tennessee, Knoxville, TN, USA
- T10-08 10:45 Relationship between Culture- and Molecular-based Methods in Detecting *Escherichia coli* O157 in Cattle Feces  
MEGAN JACOB, Anna Rogers, Jianfa Bai, David Renter, TG Nagaraja, North Carolina State University, Raleigh, NC, USA
- T10-09 11:00 Improved Protocol for Isolation of *Campylobacter* spp. from Retail Broiler Meat  
OMAR OYARZABAL, Aretha Williams, Ping Zhou, Mansour Samadpour, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- T10-10 11:15 Effect of Bicarbonate Concentration on Aerobic Growth of *Campylobacter* in a Fumarate-Pyruvate Medium  
ARTHUR HINTON, U.S. Department of Agriculture-ARS, Athens, GA, USA
- T10-11 11:30 In-depth Analysis of Chlorine Dioxide Exposure on *Listeria monocytogenes*  
AARON PLEITNER, Valentina Trinetta, Mark Morgan, Richard Linton, Haley Oliver, Purdue University, West Lafayette, IN, USA
- T10-12 11:45 Norovirus Cross-contamination Associated with Bare Hands and Gloves during Produce Handling  
GRISHMA KOTWAL, Jennifer Cannon, University of Georgia, Griffin, GA, USA

S Symposia

R Roundtable

T Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

## WEDNESDAY AFTERNOON JULY 31

(Posters will be on display 9:00 a.m. – 3:00 p.m.  
See details beginning on page 61)

### S36 Food Safety for Large Events: Lessons Learned from the Olympics and Conventions

*Charlotte Convention Center, Ballroom A*

**Organizers: Pamela Wilger, Benjamin Chapman, Stephen Tracey**

**Convenors: Pamela Wilger, Ruth Petran**

- 1:30 Evaluating Vendors through Microbiological Sampling and Coordinating Inspections during the 2012 DNC  
DONNA WANUCHA, U.S. Food and Drug Administration, Southeast Region, Charlotte, NC, USA
- 2:00 Food Defense at High-profile Events  
JULIE CASANI, NC Department of Health and Human Services, Raleigh, NC, USA
- 2:30 Managing Food Safety at the Vancouver 2010 Olympics  
DOMENIC LOSITO, Retired from Vancouver Coastal Health, Vancouver, BC, Canada
- 3:00 Managing Multiple Vendors and Volunteer Food Handlers at Large Events  
LARRY MICHAEL, North Carolina Department of Health and Human Services, Raleigh, NC, USA

### S37 What is Dry Sanitation? What is Dry Cleaning?

*Charlotte Convention Center, Ballroom B*

*Sponsored by the ILSI North America Technical Committee on Food Microbiology*

**Organizer: Ashley Jarvis**

**Convenors: Stefanie Gilbreth, Martin Wiedmann**

- 1:30 What is Dry Cleaning vs. Dry Sanitation? What Defines a "Dry Plant?"  
DON ZINK, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 2:00 Dry Cleaning and Dry Sanitation Techniques – Best Practices for Cleaning and Sanitizing Nut Butter Processing Equipment  
STEPHEN GROVE, Institute for Food Safety and Health, Bedford Park, IL, USA
- 2:30 Environmental Hygiene Control in a Dry Environment  
SCOTT BURNETT, MOM Brands, Lakeville, MN, USA
- 3:00 How Do You Validate Dry Cleaning?  
DEANN AKINS-LEWENTHAL, ConAgra Foods, Omaha, NE, USA

### S38 Validation of Sanitation – Expectations and Approaches

*Charlotte Convention Center, 217A*

*Sponsored by the Food Allergy Research and Resource Program*

**Organizers: Frederick Cook, Yale Lary, Jr.**

**Convenors: Frederick Cook, Yale Lary, Jr.**

- 1:30 Validation of Sanitization for Microbiological Control – General Approaches  
JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., McFarland, WI, USA
- 2:00 Validation of Sanitization for Allergen Removal – General Approaches  
JOSEPH BAUMERT, Food Allergy Research & Resource Program, University of Nebraska, Lincoln, NE, USA
- 2:30 Specific Experiments – Validating Sanitizing Methods for Conveyor Belts of Various Design  
ZHINONG YAN, Intralox, L.L.C., Okemos, MI, USA
- 3:00 Specific Experiences with Validating Sanitizing Methods  
MARK DRAKE, Kraft Foods, Inc, Glenview, IL, USA

### S39 From Cocoa Beans to Baking Chips, Candy Bars and Bunnies: Food Safety Issues That Affect Chocolate throughout the Global Production Chain

*Charlotte Convention Center, 217BC*

**Organizers: Linda Leake, Chuck Czuprynski**

**Convenors: Linda Leake, Chuck Czuprynski**

- 1:30 The Impact of Unlocking the Cocoa Bean's Genome on Pre- and Post-harvest Food Safety  
DAVID KUHN, U.S Department of Agriculture-ARS, Miami, FL, USA
- 2:00 Controlling Microbes: Managing Pathogen Risks along the Chocolate Production Process  
LAURIE POST, Mars Global Chocolate, Hackettstown, NJ, USA
- 2:30 Beans Become Bountiful Treats: Implementing a HACCP Plan in Chocolate Manufacturing  
STERLING THOMPSON, Hershey Company, Inc., Hershey, PA, USA
- 3:00 Always Important: Validating Thermal Inactivation of Foodborne Pathogens in Cocoa Bean Processing  
TIM JACKSON, Nestle USA, Inc., Glendale, CA, USA

### S40 Making Traceability Work across the Entire Supply Chain

*Charlotte Convention Center, 217D*

*Sponsored by the IAFP Foundation*

**Organizer: Tejas Bhatt**

**Convenor: Tejas Bhatt**

- 1:30 Overview of FDA/IFT Product Tracing Pilots  
JENNIFER MCENTIRE, Leavitt Partners, Frederick, MD, USA
- 2:00 Use of Information Technology in Product Tracing  
TEJAS BHATT, Institute of Food Technologists, Washington, D.C., USA

**S** Symposia

**R** Roundtable

**T** Technicals

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

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- 2:30 Product Tracing in Processed Foods: It's a Process  
PAUL LOTHIAN, Tyson, Fayetteville, AR, USA
- 3:00 Regulatory Framework: What Now?  
SHERRI MCGARRY, U.S. Food & Drug Administration, White Oak, MD, USA

## S41 Using the Food Emergency Response Network to Improve National Food Defense through Integration of Federal, State and Local Laboratories

*Charlotte Convention Center, 218-219*

**Organizers: Tara Doran, Robert Phillips**

**Convenors: Robert Phillips, Tara Doran**

- 1:30 The Food Emergency Response Network: Federal and State Laboratories Working Together to Improve Food Defense  
RANDY LAYTON, U.S. Department of Agriculture-FSIS-FERN, Athens, GA, USA
- 2:00 Triage of Unknown Samples for Microbiology Targets Related to Food Defense  
JAMES RUDRIK, Michigan Department of Community Health Bureau of Laboratories, Lansing, MI, USA
- 2:30 Radiochemistry Testing Food and Experiences during the Fukushima Daiichi Reactor Meltdown  
BLAINE RHODES, Washington State Department of Health, Shoreline, WA, USA
- 3:00 FERN Political Convention Food Surveillance Activities  
DON BURR, U.S. Food and Drug Administration-USPHS-CFSAN, Bedford Park, IL, USA

## S42 Preserve This! Novel Preservatives and Applications in Acid and Acidified Foods

*Charlotte Convention Center, 213BC*

*Sponsored by the IAFF Foundation*

**Organizers: Jena Roberts, Fred Breidt,**

**Emilia Rico-Munoz, Margarita Gomez**

**Convenors: Margarita Gomez, Jena Roberts**

- 1:30 Issues Associated with Utilization of Antimicrobial Compounds in Beverages and Acidified Foods  
P. MICHAEL DAVIDSON, University of Tennessee, Knoxville, TN, USA
- 2:00 Antimicrobial Packaging for Inactivating Foodborne Pathogens and Extending Microbiological Shelf Life of Fruit Juices and Beverages  
TONY JIN, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- 2:30 Application of Natural and Novel Antimicrobials in Acid and Acidified Foods – Part 1  
LARRY STEENSON, DuPont Nutrition and Health, New Century, KS, USA
- 2:45 Application of Natural and Novel Antimicrobials in Acid and Acidified Foods – Part 2  
BILL KING, Food Safety Consultant, Walnut Creek, CA, USA
- 3:00 The Global Regulatory Landscape for Natural Preservatives: What Can You Put on a Label?  
LESLIE KRASNY, Keller and Heckman LLP, San Francisco, CA, USA

## T11 Technical Session 11 – Microbial Food Spoilage, Pathogens

*Charlotte Convention Center, 213D*

**Convenors: David Golden, Marjorie Jones**

- T11-01 Foodborne Pathogen Persistence in the Meat Processing Environment: Longitudinal Study Results, Training Outcomes, and Additional Investigation  
1:30  
ALEX BRANDT, Eva Borjas, Jessica Chen, Martin Wiedmann, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- T11-02 The Spatio-temporal Distribution and Geographical Predictors of *Listeria* species in Natural Areas and the Produce Pre-harvest Environment of New York State  
1:45  
TRAVIS CHAPIN, Stephanie Masiello, Martin Wiedmann, Peter Bergholz, Laura Strawn, Cornell University, Ithaca, NY, USA
- T11-03 Molecular and Genomic Characterization of STEC in The Netherlands  
2:00  
EELCO FRANZ, Angela van Hoek, Fimme van der Wal, Albert de Boer, Frank Harders, Alex Bossers, Henk Aarts, RIVM - Centre for Infectious Disease Control, Bilthoven, The Netherlands
- T11-04 *Listeria monocytogenes* Persistence- and Virulence-associated Mechanisms are Mediated by Lmo0753, a Crp/Fnr Family Transcription Factor  
2:15  
JOELLE SALAZAR, Zhuchun Wu, Mary Lou Tortorello, Wei Zhang, Illinois Institute of Technology, Bedford Park, IL, USA
- T11-05 Morphological Characterisation of *Bacillus sporothermodurans*  
2:30  
Alessandra Cremona, ELNA BUYS, University of Pretoria, Pretoria, South Africa
- T11-06 Prevalence and Survival of Foodborne Pathogens and Indicator Bacteria in Raw Cookie Dough  
2:45  
SOOHYOUN AHN, Dalton Herzig, Charles Clines, University of Florida, Gainesville, FL, USA
- T11-07 Molecular Characterisation of *Bacillus sporothermodurans*  
3:00  
Alessandra Cremona, Marc Heyndrickx, ELNA BUYS, University of Pretoria, Pretoria, South Africa
- T11-08 Inhibition of *Bacillus cereus* Growth by Bacteriocin-producing *Bacillus subtilis* Strains Isolated from Maari, a Baobab Seeds Fermented Condiment is Substrate Dependent  
3:15  
DONATIEN KABORE, National Research Center (CNRST/ IRSATDTA), Ouagadougou, Burkina Faso

### Wednesday Afternoon

**4:00 p.m. – 5:00 p.m. John H. Silliker Lecture**

*Charlotte Convention Center, Ballroom AB*

*Dane Bernard, Vice President Food Safety and Quality, Keystone Foods LLC, West Conshohocken, Pennsylvania*

Food Safety Risk Management for a Multinational Company; Things I Wish I Knew before Taking the Job and Things I Have Learned along the Way!

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**S** Symposia

**R** Roundtable

**T** Technicals

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# JOHN H. SILLIKER LECTURE

Wednesday, July 31 • 4:00 p.m. – 5:00 p.m.



## Dane Bernard

Vice President  
Food Safety and Quality,  
Keystone Foods LLC  
West Conshohocken,  
Pennsylvania

**D**ane Bernard is Vice President of Food Safety and Quality Assurance at Keystone Foods LLC, in West Conshohocken, PA, where he is responsible for global programs on HACCP and Food Safety. Prior to joining Keystone in 2001, he was Vice President, Food Safety, for the National Food Processors Association, where he had worked since 1973.

Mr. Bernard received his B.S. in Agriculture from Purdue University in West Lafayette, IN and a M.S. in Food Science from the University of Maryland in College Park. He is a Registered Specialist in food, dairy and sanitation microbiology with the American Academy of Microbiology. Mr. Bernard has conducted extensive testing of food processing systems, supervised research in many areas of food safety and has authored or co-authored several technical articles. He has been an instructor and lecturer on principles and applications of HACCP and has assisted in formulating HACCP plans for the U.S. food industry. Mr. Bernard has been an invited expert to five International Consultations sponsored by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO), dealing with certain aspects of HACCP, Risk Analysis and other food safety issues.

Mr. Bernard is a member of the American Society for Microbiology (ASM), the Institute of Food Technologists (IFT) and the International Association for Food Protection (IAFP). He has also been a member of the U.S. delegation to the Codex Committee on Food Hygiene. In 1997, he was named to the U.S. National Advisory Committee on Microbiological Criteria for Foods.

Mr. Bernard was the 1996 recipient of the Harold Barnum Industry Award presented by IAFP and the 2000 recipient of the Carl Fellers Award presented by IFT. He has been a “Distinguished Lecturer” for IFT for the past two years.

# JOHN H. SILLIKER ABSTRACT

## Food Safety Risk Management for a Multinational Company; Things I Wish I Knew before Taking the Job and Things I Have Learned along the Way!

### Dane Bernard

Vice President, Food Safety and Quality, Keystone Foods LLC  
West Conshohocken, PA

**T**he field of Food Safety is challenging and personally rewarding for many reasons. For those who practice Food Safety Risk Management from an industry view point, accomplishing your food safety management objectives will involve applying deep food safety knowledge as well as other skills needed to navigate the political channels between business units and the corporate office. And as Henry Kissinger once said about becoming Secretary of State, (paraphrasing) “you should know what you need to know before you take the job because you won’t have a chance to learn it on the job.” This is not to say that there is no learning once you take that Food Safety job for a multinational company but the time will be taken up with the issue of the moment and the multiple issues that arise each day. Be ready, there won’t be time to learn the basics on the job!

It has been my experience that food safety roles and responsibilities within a multinational are not transparent. Most companies of significant size will have divisions or business units and depending on corporate philosophy, these units may operate more or less independently. Even if a company culture is tilted toward central control, human nature takes over and rebel camps are inevitable resulting in even less transparency. In some companies all the quality and food safety staff reports to a central authority and in others, they will report within the divisions with a dotted line to corporate. Understand what the landscape is and engage top management in defining what the roles and responsibilities are and how these will be communicated

through the business. RACI charts are a good tool to lay out the pattern for who makes decisions under what conditions and who is responsible for subsequent actions.

Make certain to have your foundational documents in place, up to date, and relevant to your business. You can’t expect conformance to expectations unless the expectations are clearly laid out and relevant to the current situation. A factory or Business Unit will find ways around policies that are not compatible with their business or products so we must always work to understand the business situation in each geographical area and in the markets to which product is shipped. At the same time, keep “thou shalt” policies to a minimum. Simpler is better and more sustainable.

Encourage management to use incentives for the business units to assist in keeping focus. For example, linking bonus for the business unit to performance on audit scores, microbiological performance, customer complaints, first quality product, and conformance to HACCP plans, are all candidates for incentivizing focus. A system for capturing data that is completely transparent is ideal for this purpose but is not often a reality considering how often things change in terms of company structure for sizable companies.

Running a successful program will require much more than a good understanding of hazards and their controls. Your company’s future and the well being of your customers may rest on your ability to address the additional factors needed to implement an effective, global food safety program.



# Make a Difference in Food Safety

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**P1 Risk Assessment  
Food Toxicology  
Beverages and Water  
Meat and Poultry  
Dairy and Other Food Commodities  
Food Defense  
Communication Outreach and Education  
Non-microbial Food Safety  
General Microbiology  
Epidemiology  
Seafood  
Microbial Food Spoilage  
Sanitation**

*Charlotte Convention Center, Exhibit Hall*

*P1-01 through P1-90 – Authors present*

*10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.*

*P1-91 and above – Authors present*

*2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.*

**Risk Assessment**

- P1-01 Foodborne Illness Attribution of USDA-regulated Products - MARCUS GLASSMAN, Sarah Klein, Caroline Smith DeWaal, Center for Science in the Public Interest, Washington, D.C., USA
- P1-02 Modeling Risks to Sensitive Subpopulations from *Listeria monocytogenes* - BEN A. SMITH, Sarah C. Totton, Andrew Fedoruk, Aamir Fazil, Anna Lammerding, Public Health Agency of Canada, Guelph, ON, Canada
- P1-03 Retail-to-Fork Risk Modeling to Predict the Risks Associated with *Escherichia coli* O157:H7 from the Consumption of Fresh-cut Salads and Sprouts in Korea - HYUN JUNG KIM, Kisun Yoon, Jong-Kyung Lee, Joon Il Cho, SoonHo Lee, Ingyun Hwang, Korea Food Research Institute, Sungnam, South Korea
- P1-04 Development of a Facility-level Quantitative Microbial Risk Assessment Model for *Listeria monocytogenes* in Cold Smoked Salmon - ELIZABETH WILLIAMS, Robert Buchanan, University of Maryland, College Park, MD, USA
- P1-05 Prevalence and Counts of *Salmonella* and Enterohemorrhagic *Escherichia coli* in Raw, Shelled Runner Peanuts - ROBERT MIKSCH, James Leek, Samuel Myoda, Truyen Nguyen, Kristina Tenney, Vladimir Svidenko, Kay Greeson, Mansour Samadpour, IEH Laboratories and Consulting Group, Lake Forest Park, WA, USA
- P1-06 Risk Assessment of Salmonellosis from Raw Shelled Runner Peanuts - ROBERT MIKSCH, James Leek, Samuel Myoda, Mansour Samadpour, IEH Laboratories and Consulting Group, Lake Forest Park, WA, USA
- P1-07 Quantitative Risk Assessment of *Staphylococcus aureus* through Consumption of Seasoned Dried Fish Products in Korea - HYUN JUNG KIM, Kisun Yoon, Yohan Yoon, Joon Il Cho, SoonHo Lee, Ingyun Hwang, Korea Food Research Institute, Sungnam, South Korea
- P1-08 Predictive Model for Survival and Growth of *Salmonella* on Chicken during Cold Storage - THOMAS OSCAR, U.S. Department of Agriculture-ARS, Princess Anne, MD, USA
- P1-09 Norovirus Transfer between Foods and Food Contact Materials - AMBROOS STALS, Mieke Uyttendaele, Leen Baert, Els Van Coillie, Ghent University, Ghent, Belgium

- P1-10 Development of Predictive Mathematical Models to Predict *Staphylococcus aureus* Growth in Ready-to-Eat Salads at Constant and Dynamic Temperatures - HEEYOUNG LEE, Ahreum Park, Kun Sang Park, SoonHo Lee, Joon Il Cho, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
  - P1-11 Differences in Survival of Acid-stress Resistant Phenotype of *Listeria monocytogenes* in Quaternary Ammonium Compounds, Ethanol, NaOCl, and H<sub>2</sub>O<sub>2</sub> - QIAN SHEN, Kamlesh Soni, Ramakrishna Nannapaneni, Mississippi State University, Mississippi State, MS, USA
  - P1-12 Oxidative-stress Resistance Response of *Listeria monocytogenes* and Its Cross Functionality against Lethal Processing Treatments - PIUMI ABEYSUNDARA, Kamlesh Soni, Ramakrishna Nannapaneni, Mississippi State University, Mississippi State, MS, USA
  - P1-13 Development of a Predictive Model Describing the Growth of *Staphylococcus aureus* in Salad Dressing Sauce - JOON IL CHO, Na Ry Son, Sook Jin Jeong, Min Kyung Han, Jun Hyuk Choi, Kun Sang Park, SoonHo Lee, Food and Drug Administration, Chungcheongbuk-do, South Korea
  - P1-14 Mathematical Models to Describe the Kinetic Behavior of *Staphylococcus aureus* on Processed Cheeses - KYUNGMI KIM, Heeyoung Lee, Soomin Lee, Sooyeon Ahn, Soonmin Oh, Jin San Moon, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
  - P1-15 A Qualitative Microbiological and Chemical Risk Assessment for Potatoes - SUSAN LEAMAN, Diane Wetherington, Intertox Decision Sciences, Seattle, WA, USA
  - P1-16 Assessment of the Contamination Potentials of Biofilms for Food Products - VICTORIA ADETUNJI, Jacob Kwaga, Jinru Chen, University of Ibadan, Ibadan, Nigeria
  - P1-17 Microbiological Safety Assessment for Cultivation Farms of Balloon Flower to Establish a Good Agricultural Practices (GAP) Model - CHAE-WON LEE, Su-Hee Park, Kyeongyeol Kim, Jeong-Sook Kim, Won-Bo Shim, Duck-Hwa Chung, Gyeongsang National University, Jinju, South Korea
  - P1-18 Microbiological Hazard Analysis of Ginseng Farms at the Cultivation Stage to Develop a Good Agricultural Practices (GAP) Model - SU-HEE PARK, Chae-Won Lee, Kyeongyeol Kim, Jeong-Sook Kim, Won-Bo Shim, Duck-Hwa Chung, Gyeongsang National University, Jinju, South Korea
  - P1-19 Consumer Storage Practices and Their Impacts on Microbial Safety of Home Refrigerated Foods - FUR-CHI CHEN, Sandria Godwin, Alex Frederick, Richard Stone, Tennessee State University, Nashville, TN, USA
  - P1-20 Isolation and Identification of Zoonotic Species of Genus *Arcobacter* from Chicken Viscera Obtained from Retail Distributors of the Metropolitan Area of San Jose, Costa Rica - MARIA LAURA ARIAS, Evelyn Carolina Chaves, Heriberto Fernandez Jaramillo, Edgar Garcia Villalobos, Universidad de Costa Rica, San Jose, Costa Rica
  - P1-21 Food Safety Challenges and Training Needs at Korean Restaurants in the U.S.: A Review of Health Inspection Reports - JUNEHEE KWON, Yunhwa Kim, Han Wen, Sockju Kwon Fogleman, Kansas State University, Manhattan, KS, USA
  - P1-22 Is Antibiotic Resistance a Selective Advantage to Environment Stresses? - MASTURA AKHTAR, Francisco Diez-Gonzalez, Fernando Sampedro Parra, University of Minnesota, St. Paul, MN, USA
- Food Toxicology**
- P1-23 Stability of Patulin in Apple Juice during Storage as Determined by GC-MS/MS - ELNA BUYS, Houda Berrada, Jordi Mañes, University of Pretoria, Pretoria, South Africa

- P1-24 Distribution of *Fusarium* spp. and Mycotoxins Nivalenol and Zearalenone in Rice (*Oryza sativa*) Harvested from Korea - Hyun Ee Ok, Dong Min Kim, HYANG SOOK CHUN, Korea Food Research Institute, Sungnam, South Korea
- P1-25 Development and Characterization of an Anti-Fumonisin Monoclonal Antibody - RICHARD KREBS, Valentina Voronkova, Asa Bergdahl, Cesar Nadala, Mansour Samadpour, IEH Laboratories and Consulting Group, Lake Forest Park, WA, USA
- ### Beverages and Water
- P1-26 Thermal Inactivation of Acid Adapted and Non-adapted Stationary Phase *Salmonella* spp. and *Listeria monocytogenes* in Orange Juice - ZEYNAL TOPAL CENGIZ, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P1-27 Comparison of Propidium Monoazide Real-time PCR and a Conventional Culture-based Method (EPA Method 1603) for Detection of Viable *Escherichia coli* in Water - YARUI LIU, Guolu Zheng, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA
- P1-28 Efficient Reduction of *Cryptosporidium parvum* Oocysts from Apple Cider by Combining Microfiltration with Ultraviolet Treatment - Jessie Usaga, DONGJUN ZHAO, Qing Wang, Sarah Markland, Olga Padilla-Zakour, Randy Worobo, Kalmia Kniel, Carmen Moraru, Cornell University, Ithaca, NY, USA
- P1-29 Microbiological Quality of Ice Made and Bagged On-premises in Retail Stores and in Self-serve Vending Machines in Georgia - STEPHANIE MAKO, Mark Harrison, Fanbin Kong, University of Georgia, Athens, GA, USA
- P1-30 The Use of the BacT/ALERT and a New Neutralizing Medium for the Improved Recovery of Microbial Contamination in a Variety of Aseptic Chocolate Product - PATRICIA RULE, John Mills, J. Stan Bailey, bioMérieux, Inc., Hazelwood, MO, USA
- ### Meat and Poultry
- P1-31 Prevalence and Quantification of *Campylobacter* in Chicken Carcasses of Slaughtering Process - HYUNJUNG PARK, Jinhee Lee, Solyi An, Eun Jeong Heo, Young Jo Kim, Soonmin Oh, Jin San Moon, Quarantine and Inspection Agency, Anyang, South Korea
- P1-32 Program Development to Determine Internalized *Salmonella* Prevalence Rate in Turkey Flocks by Testing Spleens - Ted Brown, MICHELLE RIEMANN, Oscar Esquivel, Cargill, Wichita, KS, USA
- P1-33 Identification and Prevalence of *Escherichia fergusonii* in Broiler Chickens - Karen Simmons, Heidi Rempel, Glenn Block, PASCAL DELAQUIS, Ed Topp, Moussa Diarra, Agriculture and Agri-Food Canada, Summerland, BC, Canada
- P1-34 Sponge and Skin Excision Sampling for Recovery of Inoculated *Salmonella* and *Campylobacter* from Defeathered Broiler Carcasses - MARK BERRANG, Nelson Cox, R. Jeff Buhr, U.S. Department of Agriculture-ARS-RRC, Athens, GA, USA
- P1-35 Evaluating Post-evisceration Processing Steps and In-plant Antimicrobial Treatments against *Campylobacter*, *Escherichia coli*, and Aerobic Bacteria on Poultry Carcasses - NATHAN WIDEMAN, Sacit Bilgili, Harshavardhan Thippareddi, Luxin Wang, Christy Bratcher, Manpreet Singh, Auburn University, Auburn, AL, USA
- P1-36 Prevalence of *Campylobacter* spp. on Poultry Carcasses during Processing and in Slaughtering Environment - MIRENA IVANOVA, Xiuping Jiang, Clemson University, Clemson, SC, USA
- P1-37 Validating an Inside-Outside Bird Washer as an Effective On-line Reprocessing System - CRAIG M. LEDBETTER, Deborah Klein, Jeremy Adler, Ecolab Inc., Eagan, MN, USA
- P1-38 Effects of Commercial Seasoning and Cultured Sugar/Vinegar Blend on the Behavior of *Campylobacter jejuni* and *Salmonella* Typhimurium of Precooked Chicken Breast during Refrigerated Storage - EUN YOUNG RO, Na Yoon Park, Kisun Yoon, Kyung Hee University, Seoul, South Korea
- P1-39 Bromine-based Biocides for the Control of Pathogens in Simulated Chill Tanks in Poultry Processing - MIGUEL GUTIERREZ, Laura Gage, Brian Nixon, Eric Liimatta, Albemarle Corporation, Baton Rouge, LA, USA
- P1-40 Inhibition of *Clostridium perfringens* by Innostatin 007B and Mostatin V in Uncured and Naturally Cured Turkey during Abusive Cooling - VICENTE SILVESTRE, Mauricio Redondo-Solano, Carol Valenzuela-Martinez, Gary Sullivan, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-41 Inhibition of *Listeria monocytogenes* on Non-cured Turkey Breast by MOstatin V and INNOstatin 007B during Refrigerated Storage - MAURICIO REDONDO-SOLANO, Dennis Burson, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-42 Occurrence of *Listeria* spp. in Bovine Carcasses Processing Plants and Characterization of *L. monocytogenes* Isolates - Anderson Carlos Camargo, Marcus Vinicius Coutinho Cossi, Frederico Germano P. Alvarenga Lanna, Mariane Rezende Dias, Paulo Sergio de Arruda Pinto, LUÍS AUGUSTO NERO, Universidade Federal de Viçosa, Viçosa, Brazil
- P1-43 Evaluation of Beef Trim Sampling Methods for Detection of Shiga Toxin-producing *Escherichia coli* (STEC) - RANDALL PHEBUS, John Luchansky, Anna Porto-Fett, Harshavardhan Thippareddi, David Marx, Rachael Sullivan, Susan Hettenbach, Casey Paddock, Nicholas Baumann, Nicholas Severt, Minto Michael, Donka Milke, Nigel Harper, Carla Schwan, Andre Senecal, Manpreet Singh, Kansas State University, Manhattan, KS, USA
- P1-44 Distribution and Detection of Shiga Toxin-producing *Escherichia coli* (STEC) during Large-scale Grinding of Beef Trim - Randall Phebus, John Luchansky, Anna Porto-Fett, Harshavardhan Thippareddi, Manpreet Singh, Rachael Sullivan, Susan Hettenbach, Nicholas Baumann, John Wolf, Nicholas Severt, Minto Michael, NIGEL HARPER, Donka Milke, Casey Paddock, Carla Schwan, Andre Senecal, Kansas State University, Manhattan, KS, USA
- P1-45 Prevalence of *Salmonella* on Beef Hides and Carcasses at an Abattoir in Merida, Mexico - MARTHA MARADIAGA, Markus F. Miller, Alejandro Echeverry, Lyda G. Garcia, Sara Gragg, Henry Ruiz, Alexandra Calle, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P1-46 Enrichment Temperature Variation Effects on *Shigella* qPCR in High Background Food Matrices - AMIE MINOR, Kellie Littlefield, Brenda Keavey, West Virginia Department of Agriculture, Charleston, WV, USA
- P1-47 Evaluation of Process Control to Prevent Contamination of Beef with Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) in U.S. Export Abattoirs in Costa Rica - BYRON D. CHAVES, Lyda G. Garcia, Alejandro Echeverry, Markus F. Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P1-48 Biofilm Formation and Sanitizer Resistance Contributes to "High Event" Meat Contamination by *Escherichia coli* O157:H7 - RONG WANG, U.S. Department of Agriculture-ARS, Clay Center, NE, USA
- P1-49 Optimization of the Elution Buffer and Concentration Methods to Detect Hepatitis E Virus in Meat Using Nested Reverse Transcription-polymerase Chain Reaction and Real-time Reverse Transcription-polymerase Chain Reaction - NA RY SON, Sheungwoo Seo, Dong Joo Seo, Xiaoyu Wang, Min Hwa Lee, Jeong-Su Lee, In-Sun Joo, Ingyun Hwang, Changsun Choi, Chung-Ang University, Ansung-Si, Gyeonggi, South Korea
- P1-50 Prevalence and Characterization of Methicillin-resistant *Staphylococcus aureus* Isolated from Commercial Pork Processing Plants in Canada - Toufeer Mehdi, Claudia Narvaez Bravo, Scott Weese, Moussa Diarra, Deckert Anne, Richard Reid-Smith, MUEEN ASLAM, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- P1-51 Effects of Rooibos on the Behavior of *Clostridium perfringens* in Jokbal (Pig Trotters) - HYEJIN JO, Heejin Park, Kisun Yoon, Kyung Hee University, Seoul, South Korea
- P1-52 Development of Multiplex PCR Assay for Species Identification of Cattle, Hog, Chicken and Duck from Raw Meats - Eun Kyung Ko, EUN JEONG HEO, Young Jo Kim, Hyunjung Park, Jin San Moon, Soonmin Oh, Quarantine & Inspection Agency, Aayang City, South Korea
- P1-53 Prevalence of *Escherichia coli* Non-O157:H7 STEC in Beef in Mexico - GRAYSEN ORTEGA, Mark Miller, Alexandra Calle, Katelyn Ortega, Alejandro Echeverry, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P1-54 Destruction of *Listeria monocytogenes* and Shelf-life Extension of Sliced Roast Beef and Turkey Breast by High Pressure Processing - MAURICIO REDONDO-SOLANO, Carol Valenzuela-Martinez, Lin Li, Jihan Cepeda, Dennis Burson, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-55 Multiple Models for Aggregated Foodborne Pathogen Transfer Data between Meat Products and Contact Surfaces - AMANDA BENOIT, Bradley Marks, Elliot Ryser, Philip Crandall, Michigan State University, East Lansing, MI, USA
- P1-56 Development and Validation of Microwave Heating Instructions for Pot Pies to Assure Food Safety - CAROL VALENZUELA-MARTINEZ, Mauricio Redondo-Solano, Edel Summers, Jeyamkondan Subbiah, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-57 Development and Validation of Microwave Heating Instructions for Chicken Nuggets - CAROL VALENZUELA-MARTINEZ, Mauricio Redondo-Solano, Edel Summers, Jeyamkondan Subbiah, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-58 Development and Validation of a Finite Element Heat Transfer Model for Pasteurization of Shell Eggs with Radio Frequency Heating - SOON LAU, Sohan Birla, Harshavardhan Thippareddi, Jeyamkondan Subbiah, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-59 Development and Validation of a Heat and Mass Transfer Model for Air Cooling of Poultry Carcasses - JIHAN CEPEDA, Jeyamkondan Subbiah, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-60 Proficiency Testing of Laboratories Analyzing *Shigella flexneri* and *Shigella dysenteriae* from Spiked Sausage - MICHAEL URBANCZYK, Greg Gharst, Robert Newkirk, Robin Kalinowski, Tara Doran, Ruiqing Pamboukian, FERN Laboratory Cadre, Wen Lin, Ravinder Reddy, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-61 Thermal Inactivation of *Escherichia coli* O157:H7 (ECOH) and Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) in Mechanically Tenderized Veal - JOHN LUCHANSKY, Anna Porto-Fett, Bradley Shoyer, Harshavardhan Thippareddi, Jesus Amaya, Michael Lemler, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P1-62 Ultraviolet Light as a Post-lethality Treatment against *Listeria monocytogenes* on Bologna and Its Impact on Quality Attributes - DEEPIKA SURESH, Manpreet Singh, Auburn University, Auburn, AL, USA
- P1-63 Resistance of Parent and Nalidixic Acid Adapted (NA) *Escherichia coli* O157:H7 and Other Shiga Toxin-producing Non-O157 *Escherichia coli* to Ultraviolet Treatment - SAILAJA CHINTAGARI, Yen-Con Hung, University of Georgia, Griffin, GA, USA
- P1-64 Nonthermal Plasma Treatment of Packaged Inoculated Poultry Breast Fillets for the Reduction of Spoilage Bacteria and Zoonotic Pathogens - TAYLOR KRONN, Yao-wen Huang, Hong Zhuang, Kurt Lawrence, Kelli Hielt, Michael Rothrock, Kevin Keener, University of Georgia, Athens, GA, USA
- P1-65 Development and Validation of a Dynamic Predictive Model for Growth of *Salmonella* spp. in Scrambled Egg Mix - LIN LI, Jihan Cepeda, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-66 Direct Observational Study of the Risks of Cross Contamination during Raw Poultry Handling: Practices in Private Homes - EYOB MAZENGLIA, Grace Liao, Xiaoqiong Huang, Cameron Fisk, John Meschke, University of Washington, Seattle, WA, USA

## Dairy and Other Food Commodities

- P1-67 Development of Kinetic Models to Compare *Staphylococcus aureus* Growth among Fresh Cheese - HEEYOUNG LEE, Soomin Lee, Kyungmi Kim, Sooyeon Ahn, Jin San Moon, Soonmin Oh, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- P1-68 Validation of Radio Frequency Dielectric Heating (RFDH) System for Destruction of *Cronobacter sakazakii* and *Salmonella* spp. in Nonfat Dry Milk (NDM) - MINTO MICHAEL, Randall Phebus, Harshavardhan Thippareddi, Jeyamkondan Subbiah, Sohan Birla, Karen Schmidt, Kansas State University, Manhattan, KS, USA
- P1-69 Heat Resistance of *Escherichia coli* Strains in Raw Milk at Different Subpasteurization Conditions Tested in a Pilot Plant Pasteurizer - Silvio Peng, Jörg Hummerjohann, CLAUDIO ZWEIFEL, Roger Stephan, Philipp Hammer, University of Zurich, Zurich, Switzerland
- P1-70 Safety Assessment of Hard and Semi-hard Cheeses Stored for Up to 15 Days at 25°C - WAN MEI LEONG, Sarah Engstrom, Renae Geier, Steve Ingham, Barbara Ingham, University of Wisconsin-Madison, Madison, WI, USA
- P1-71 Impact of Sodium Reduction on Survival of *Listeria monocytogenes* - MASTURA AKHTAR, Francisco Diez-Gonzalez, University of Minnesota, St. Paul, MN, USA
- P1-72 The Contamination of Antibiotics Residues and Microorganisms in Raw Cattle Milk Collected from Cha-Am District, Phetchaburi Province, Thailand - JANEJIRA FUANGPAIBOON, Phunnathorn Phuchivatapanong, Phrutiya Nilprapruck, Supawadee Manatrinon, 3M Food Safety, 3M Thailand Ltd., Bangkok, Thailand
- P1-73 Identification of Biogenic Amines Production by Bacteriocinogenic Lactic Acid Bacteria Isolated from Raw Goat's Milk - Luana Martins Perin, Barbara dal Bello, LUÍS AUGUSTO NERO, Universidade Federal de Viçosa, Viçosa, Brazil
- P1-74 Virulence Characteristics and Antibiotic Resistance of Bacteriocinogenic *Enterococcus* Isolated from Raw Goat Milk - Luana Martins Perin, Svetoslav Todorov, Bernadette Franco, LUÍS AUGUSTO NERO, Universidade Federal de Viçosa, Viçosa, Brazil
- P1-75 Probiotic Fermented Cow's and Goat's Milks: Determination of Biogenic Amines and Sensory Acceptance - Marion Costa, Celso Balthazar, Bruna Rodrigues, Cesar La Torre, Adriana Silva, Adriano Cruz, CARLOS CONTE-JUNIOR, Federal Fluminense University, Rio de Janeiro, Brazil

- P1-76 [More Than Just a Processing Nuisance: Looking at Psychrotolerant Coliform Bacteria in Pasteurized Fluid Milk](#) - STEPHANIE MASIELLO, Nicole Martin, Martin Wiedmann, Kathryn Boor, Cornell University, Ithaca, NY, USA
- P1-77 [An Independent Laboratory Verification of an Antibiotic Assay for the Rapid Detection of  \$\beta\$ -lactam and Tetracycline Residues in Raw Milk](#) - Kiel Fisher, Jennifer Rice, Travis Huffman, Jonathon Flannery, Erin Crowley, PATRICK BIRD, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA
- P1-78 [An Integrated Cell Culture-PCR \(ICC-PCR\) Assay for Comparing Thermal Inactivation of \*Coxiella burnetii\* in Skim and Whole Milk](#) - JIAOJIE ZHENG, Songchuan Ma, Diana Stewart, Joseph Schlessner, Y. Carol Shieh, Arlette Shazer, Mary Lou Tortorello, Illinois Institute of Technology, Chicago, IL, USA

## Food Defense

- P1-79 [Capture and Detection of \*Bacillus anthracis\* Spores Using Aptamer Based Surface Enhanced Raman Spectroscopy](#) - BRONWYN DEEN, Alyssa Pagel, Lili He, Francisco Diez-Gonzalez, Theodore Labuza, University of Minnesota, St. Paul, MN, USA
- P1-80 [Determination of the Heat Resistance Characteristics of \*Salmonella\* Typhimurium in a Range of Low  \$A\_w\$  Commodities](#) - JOY GAZE, Rob Limburn, Campden BRI, Chipping Campden, United Kingdom
- P1-81 [Determination of Thermal Processing Conditions for Acidified Foods with a pH of 4.6 or Below](#) - FRED BREIDT, Kathryn Kay, Jason Osborne, Fletcher Arritt, Barbara Ingham, U.S. Department of Agriculture-ARS, Raleigh, NC, USA

## Communication Outreach and Education

- P1-82 [Student Perceptions of International Agriculture: The Effects of Vicarious International Experience Intergration in High School Agriculture Education Curriculum](#) - LAURA LEMONS, Todd Brashears, Scott Burris, Candis Carraway, Joe Barbour, Eli Shahab, Texas Tech University, Lubbock, TX, USA
- P1-83 [Results of a Baseline Knowledge Survey of Students at a Predominantly Minority Chicago High School](#) - ANNE BURKE, Mark Dworkin, University of Illinois at Chicago School of Public Health, Chicago, IL, USA
- P1-84 [Identification of Core Competencies for an Undergraduate Food Safety Curriculum Using a Modified Delphi Approach](#) - LYNETTE JOHNSTON, Martin Wiedmann, Alicia Orta-Ramirez, Haley Oliver, Kendra Nightingale, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P1-85 [Gaps in Food Safety Professionals' Knowledge about Noroviruses](#) - SHERYL CATES, Katherine Kosa, Jenna Brophy, Angela Fraser, RTI International, Research Triangle Park, NC, USA
- P1-86 [Online Purveyors of Raw Meat, Poultry, and Seafood Products: Delivery Policies and Available Consumer Food Safety Information](#) - WILLIAM HALLMAN, Sandria Godwin, Angela Mersich, Holly Berman, Rutgers Food Policy Institute, New Brunswick, NJ, USA
- P1-87 [Enhancing the Safety of Locally Grown Produce through Extension Education for Farmers and Market Managers](#) - JUDY HARRISON, Julia Gaskin, Mark Harrison, Jennifer Cannon, Renee Boyer, Geoffrey Zehnder, University of Georgia, Athens, GA, USA
- P1-88 [Translating Guidance into Skills for Cooking Fish and Shellfish to Safe \(63°C\) Internal Endpoint Temperatures](#) - JERI KOSTAL, Susan Duncan, Joseph Marcy, Michael Jahncke, Rick Rudd, Renee Dupell, Virginia Tech, Chesapeake, VA, USA

- P1-89 [Comparative Study: Steam and Boiling Water Canners for Home Processing Low pH Foods](#) - PAOLA FLORES VERDAD IXTA, Barbara Ingham, Mark Etzel, Elizabeth Address, Purdue University, West Lafayette, IN, USA, University of Wisconsin-Madison, Madison, WI, USA
- P1-90 [Identifying Consumer Attitudes and Concerns about Fish and Shellfish Culinary Preparation Techniques and Food Safety](#) - JERI KOSTAL, Susan Duncan, Joseph Marcy, Michael Jahncke, Rick Rudd, Jennifer Helms, Virginia Tech, Chesapeake, VA, USA
- P1-91 [Growth of \*Listeria monocytogenes\* in Ready-to-Eat Foods: Re-enactment of Observed Domestic Storage Practices Implemented by Older Adults](#) - ELLEN EVANS, Louise Fielding, Elizabeth Redmond, Cardiff Metropolitan University (UWIC), Cardiff, United Kingdom
- P1-92 [Educating Older Adults about Food Safety Using an Annotated "Tasty and Safe" Cookbook](#) - SANDRIA GODWIN, Richard Stone, Sheryl Cates, Katherine Kosa, Melanie Ball, Tennessee State University, Nashville, TN, USA
- P1-93 [Food Safety Knowledge and Self-reported Practices of UK University Students](#) - ELLEN EVANS, Elizabeth Redmond, Cardiff Metropolitan University (UWIC), Cardiff, United Kingdom
- P1-94 [The Impact of Food Safety Training for Volunteers at the Ronald McDonald House](#) - Lauren Smith, Sujata Sirsat, JACK NEAL, University of Houston, Houston, TX, USA
- P1-95 [An Evaluation on Food Safety Performance in Louisiana School Foodservice Operations](#) - PEI LIU, Yee Ming Lee, Hui (Michelle) Xu, Louisiana Tech University, Ruston, LA, USA
- P1-96 [Factors Affecting Food Safety Training in U.S. Chinese Restaurants: Exploration of Chinese Cultural Values](#) - PEI LIU, Junehee Kwon, Louisiana Tech University, Ruston, LA, USA

## Non-microbial Food Safety

- P1-97 [Effectiveness Evaluation Study of Person In-charge \(PIC\) Program toward Food Safety across Dubai Food Industry](#) - ABDULWAHED KASSIM, Dubai Municipality, Dubai, United Arab Emirates
- P1-98 [Food Safety Certification Status, Provider, and Validity: How are They Related to Food Safety Knowledge?](#) - Brenda Le, LAURA G. BROWN, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P1-99 [Food Worker Characteristics Associated with Working While Ill](#) - LAURA G. BROWN, L. Rand Carpenter, Brenda Le, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P1-100 [Application of a Knowledge Transfer Model for Implementation of Government Food Strategies for Innovation, Safety and Quality in the Food Sector](#) - Elizabeth Redmond, DAVID LLOYD, Cardiff Metropolitan University, Cardiff, United Kingdom
- P1-101 [Infrastructure and Hygiene in the Production of School Food: An Exploratory Study in Indigenous Paxot Communities, Porto Seguro, Bahia, Brazil](#) - RYZIA CARDOSO, Karina Lavínia Souza, Universidade Federal da Bahia, Salvador, Brazil

## General Microbiology

- P1-102 [Monitoring of Hygiene Indicator Microorganisms in Frozen Foods](#) - MINJUNG LEE, Ki-Hyun Kim, Jong-Hoon Ahn, Tae-Hyeon Koo, Sookhee Ha, Ho-Won Chang, ByungMin Lee, Yo A Lee, Soon-Han Kim, Rack-Seon Seong, Kisung Kwon, Korea Food and Drug Administration, Busan, South Korea

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- P1-103 Heat and High Hydrostatic Pressure Resistance of *Escherichia coli* Isolated from a Beef Processing Facility - RIGOBERTO GARCIA-HERNANDEZ, Michael G. Gänzle, Lynn M. McMullen, University of Alberta, Edmonton, AB, Canada
- P1-104 Influence of Packaging on Spore Inactivation during Pressure-assisted Thermal Processing - RARINTHORN THAMMAKULKRAJANG, Bala Balasubramaniam, Ahmed Yousef, The Ohio State University, Columbus, OH, USA
- P1-105 Method to Determine Differences in Thermal Tolerance of *Salmonella* Serotypes at Low Water Activity - Nathan Anderson, SUSANNE KELLER, Dana Gradl, Shannon Pickens, Haiping Li, U.S. Food and Drug Administration-NCFST, Summit Argo, IL, USA
- P1-106 Development of Thermal Surrogate Cultures for In-plant Validation Studies of Pet Food Products - ERDOGAN CEYLAN, Derrick Bautista, Silliker, Inc., Crete, IL, USA
- P1-107 Application of Network Theory to Microbial Biofilms - LOUISE FIELDING, Hugh Griffiths, Neil Burton, Adrian Peters, Cardiff Metropolitan University, Cardiff, United Kingdom
- P1-108 The Effect of Sporulation Temperature on the Heat Resistance of *Clostridium botulinum* Type A Spores - KRISTIN MARSHALL, Louis Nowaczyk, Guy Skinner, Rukma Reddy, Gregory Fleischman, John Larkin, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P1-109 Reduction in the Enrichment Population of *Listeria monocytogenes* by Competitive Food Spoilage Microflora When Using Buffered *Listeria* Enrichment Broth - Rachel Dailey, Keely Martin, RONALD SMILEY, U.S. Food and Drug Administration-ORA, Jefferson, AR, USA
- P1-110 Citrus Extracts Inhibit Quorum Sensing and Expression of *flaA-B* and *cadF* in *Campylobacter jejuni* - SANDRA CASTILLO, Elva Arechiga, Norma Heredia, Santos Garcia, Universidad A. de Nuevo Leon, San Nicolas, Mexico
- P1-111 Canada Geese as Possible Vectors of Antimicrobial-resistant Bacteria - BRANDON YOUNG, Jeffrey LeJeune, Kevin Allen, The University of British Columbia, Vancouver, BC, Canada
- P1-112 Distribution and Genetic Diversity of *Salmonella enterica* Isolated from Irrigation Water in the Suwannee River Watershed - ZHIYAO LUO, Ganyu Gu, Mary Paige Adams, George Vellidis, Ariana VanBruggen, Michelle Danyluk, Anita Wright, University of Florida, Gainesville, FL, USA
- P1-113 Bacteriophages Specific to Human Pathogens from Environmental Water Samples - GAYATHRI GUNATHILAKA, Yifan Zhang, Manisha Polur, Wayne State University, Detroit, MI, USA
- P1-114 Fate of Indicator Microorganisms on Oranges Following Application of Low Microbial Quality Water in Foliar Sprays - GABRIEL MOOTIAN, Loretta Friedrich, Timothy Spann, Donald Schaffner, Michelle Danyluk, Rutgers University, New Brunswick, NJ, USA
- P1-115 Use of Edible Films Containing Plant Antimicrobials to Inhibit *Pseudomonas fluorescens* in Bagged Organic Lettuce - Libin Zhu, Mendel Friedman, Carl Olsen, Tara McHugh, Divya Jaroni, SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA
- P1-116 Functionality Assessment of *Bacillus* Species Isolated from Iru, Fermented African Locust Bean Seeds - GBENGA ADEWUMI, University of Lagos, Akoka, Lagos, Nigeria
- P1-117 Rapid Automated Identification of New *Bacillus*, *Geobacillus* and *Paenibacillus* Species with the Updated VITEK® 2 BCL Card Knowledge Base - NANCY MOSS, Gillian Halket, Niall Logan, bioMérieux, Inc., Hazelwood, MO, USA
- P1-118 Co-production of Surfactin and a Novel Bacteriocin by *Bacillus subtilis* subsp. *subtilis* H4 Isolated from Bikalga, an African Alkaline *Hibiscus sabdariffa* Seeds Fermented Condiment - CLARISSE S. COMPAORÉ, Dennis S. Nielsen, Hagretou Sawadogo-Lingani, Bréhima Diawara, Georges A. Ouédraogo, Mogens Jakobsen, Line Thorsen, DTA/IRSAT/CNRST, Ouagadougou, Burkina Faso
- P1-119 Analysis of the Microbial Population of *Makgeolli* (Traditional Korean Rice Wine) during the Wine's Fermentation Period - GU-SANG YIM, Yun-Ji Kim, Se-Wook Oh, Kookmin University, Seoul, South Korea
- P1-120 Assessment of Cellular Immune Crosstalk of Lysogenic *Salmonella* Typhimurium with Chicken Macrophage - JUHEE AHN, Serajus Salaheen, Alejandro Almario, Debabrata Biswas, Kangwon National University, Chuncheon, South Korea
- P1-121 Temperature Adaptation Alters *Salmonella* Enteritidis Heat/Acid Resistance and Stress/Virulence Related Gene Expression - YISHAN YANG, Qianwang Zheng, Hyun-Jung Chung, Hyun-Gyun Yuk, National University of Singapore, Singapore
- P1-122 Contact Dependent Growth Inhibition of *Escherichia coli* O157:H7 by EC869 CDI System - XIANGWU NOU, Jonathan Jones, Christopher Hayes, David Low, U.S. Department of Agriculture-ARS-BARC, Beltsville, MD, USA
- P1-123 Role of Egg-yolk Antibody (EYA) in Protection against Bacterial Association in *Salmonella*-poultry Cell Interactions - JOSE ALEJANDRO ALMARIO, Serajus Salaheen, Juhee Ahn, Daniel Hewes, Debabrata Biswas, University of Maryland-College Park, College Park, MD, USA
- P1-124 Extending the Shelf Life and Eliminating *Salmonella* spp. and *Escherichia coli* in Tahini-based Dressing - ZEINA KASSAIFY, Mohamad Abiad, American University of Beirut, Beirut, Lebanon

## Epidemiology

- P1-125 Asian Food Safety Trends: Examining the CDC Data in the United States from 1990-2008 - ADRIANA MATHEUS, Wendy Franco, Wei-Yea Hsu, Maurice Marshall, Amarat Simonne, University of Florida, Gainesville, FL, USA
- P1-126 Estimating the Burden of Foodborne Illness in Japan Using Clinical Laboratory Data for Whole of Japan, 2006-2010 - KUNIHIRO KUBOTA, Hiroshi Amanuma, Emiko Iwasaki, Yoshiharu Sakurai, Mayumi Komatsu, Miyako Oguro, Eiji Yanagisawa, Masahiro Shimojima, Shunsuke Shibuya, Fumiko Kasuga, National Institute of Health Sciences, Tokyo, Japan
- P1-127 Prevalence and Characterization of Shiga Toxin-producing *Escherichia coli* in a Pasture-based Cow-calf Production System - PATRICIA BALTASAR, Virginia Tech, Blacksburg, VA, USA
- P1-128 Multiple-Locus Variable-Number Tandem Repeat Analysis for Strain Discrimination of Non-O157 Shiga Toxin-Producing *Escherichia coli* - CHRIS TIMMONS, Eija Trees, Efrain Ribot, Peter Gerner-Smidt, Li Ma, Oklahoma State University, Stillwater, OK, USA
- P1-129 Characterization of Shiga Toxin-producing *Escherichia coli* O5 Strains Received at CDC from 2011-2012 - HALEY MARTIN, Devon Stripling, Lauri Lindberg, Evangeline Sowers, Sung Im, Kelley Hise, Efrain Ribot, John Besser, Peter Gerner-Smidt, Nancy Strockbine, Centers for Disease Control and Prevention, Atlanta, GA, USA

- P1-130 Shiga Toxin-producing *Escherichia coli* in the United States Reported through PulseNet USA and the National *Escherichia coli* Reference Laboratory from 2006–2012 - NANCY STROCKBINE, Devon Stripling, Haley Martin, Evangeline Sowers, Lauri Lindberg, Steven Stroika, Sung Im, Cheryl Bopp, Kelley Hise, Efrain Ribot, John Besser, Peter Gerner-Smidt, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P1-131 Evidence of Non-O157 Shiga Toxin-producing *Escherichia coli* in the Feces of Meat Goats at a U.S. Slaughter Plant - MEGAN JACOB, Anna Rogers, Derek Foster, Christie Balcomb, Xiaorong Shi, TG Nagaraja, North Carolina State University, Raleigh, NC, USA
- P1-132 Analysis of the Intimin Gene from Sporadic and Outbreak-associated Shiga Toxin-producing *Escherichia coli* (STEC) O26, O45, O103, O111, O121, O145 and O157 from the United States - REBECCA LINDSEY, Nancy Strockbine, Eija Hyytiä-Trees, Cheryl Tarr, Lee S. Katz, Ryan Weil, Shankar Changayil, Satishkumar Ranganathan, Kun Zhao, John Besser, Peter Gerner-Smidt, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P1-133 Assessment of Shiga Toxin-producing *Escherichia coli* (STEC) Survival and Shiga Toxin Stability in Enrichment Broths - DEVON STRIPLING, Stephen White, Cheryl Bopp, Katherine Greene, John Besser, Peter Gerner-Smidt, Nancy Strockbine, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P1-134 Prevalence of *Clostridium difficile* in Canadian Rivers and Fate during Waste Water Treatment - CHANGYUN XU, Scott Weese, Keith Warriner, University of Guelph, Guelph, ON, Canada
- P1-135 Are *Campylobacter* Cases Low Risk for Public Health Follow-up? - MARILYN LEE, Richard Meldrum, Effie Gournis, Monica Mitchell, Ryerson University, Toronto, ON, Canada
- P1-136 Effective Evidence-based Food Safety Materials for Restaurant Food Handlers: Interventions Designed to Target Knowledge Gaps - MINDI MANES, Anne Burke, Li Liu, Mark Dworkin, University of Illinois at Chicago School of Public Health, Chicago, IL, USA
- P1-137 Outbreaks Associated with Antibiotic-resistant Foodborne Pathogens - SUSAN VAUGHN GROOTERS, Caroline Smith DeWaal, Sarah Klein, Marcus Glassman, STOP Foodborne Illness, Chicago, IL, USA, Center for Science in the Public Interest, Washington, D.C., USA
- P1-138 The Epidemiology of Yersiniosis in Illinois and Missouri, 2005–2011 - APURBA CHAKRABORTY, Matthew Roberts, George Turabelidze, Mark Dworkin, UIC School of Public Health, Chicago, IL, USA
- P1-139 Development of Epidemiological Investigation System Using Mobile Lab in Korea - SOO-IL KO, Joon Il Cho, Kun Sang Park, Soo bok Kim, Yong suk Nam, Hyung Joo Yoon, Hyo Sun Kwak, Korea Food and Drug Administration, Chungcheongbuk-do, South Korea
- Seafood**
- P1-140 A Prevalence Study Investigating the Bacteriological Hazard Associated with Live Oysters on Retail Sale in Toronto, Canada - RICHARD MELDRUM, Edwin Khoo, Ryerson University, Toronto, ON, Canada
- P1-141 Prevalence of Norovirus, Hepatitis A Virus, Hepatitis E Virus, and Rotavirus in Shellfish in South Korea - DONG JOO SEO, Min Hwa Lee, Na Ry Son, Sheungwoo Seo, Kang Bum Lee, Xiaoyu Wang, In Sook Park, Changsun Choi, Chung-Ang University, Ansong-Si, Gyounggi, South Korea
- P1-142 Evaluation of a New *Salmonella* Detection Method for Seafood - KANOKPHAN SRIMANOBHAS, Fish Inspection and Quality Control Division, Bangkok, Thailand
- P1-143 **Detection of Norovirus in American Oyster (*Crassostrea virginica*) along Louisiana Gulf Coast Using Two Real-time RT-PCR Assays** - NAIM MONTAZERI, Marlene Janes, Louisiana State University, Baton Rouge, LA, USA
- P1-144 Predictive Modeling for the Thermo-ultrasound Inactivation of *Vibrio parahaemolyticus* in Shrimp during Post-harvest Washing Process - Wen Wang, MIN LI, Yanbin Li, Iowa State University, Ames, IA, USA, Zhejiang University, Hangzhou, China
- P1-145 The Effects of Storage Temperature on the Prevalence of *Vibrio parahaemolyticus* and Physical and Sensory Properties of Oysters - SALINA PARVEEN, Meshack Mudoh, Jurgen Schwarz, Tom Rippen, Anish Chaudhuri, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P1-146 Identification of Type Three Secretion System-2 Effectors of *Vibrio parahaemolyticus* - Ben Tall, CHRISTOPHER GRIM, Mahendra Kothary, Justin Hahn, Atin Datta, Augusto Franco, U.S. Food and Drug Administration-CFSAN-DVA, Laurel, MD, USA
- P1-147 **Application of Chitosan Microparticles for the Reduction of *Vibrio* Species** - LEI FANG, Anita Wright, Kwang Cheol Jeong, University of Florida, Gainesville, FL, USA
- P1-148 An Investigation into the Temperature Variation during Hot Holding of Cooked Mussels in Domestic Coolers - RICHARD MELDRUM, Peter Millar, Ryerson University, Toronto, ON, Canada
- P1-149 Evaluation of the 3M™ Molecular Detection System for the Detection of *Listeria* spp. in Seafood Processing Plant Environments in Thailand - KITIYA VONGKAMJAN, Janejira Fuangpaiboon, Sirasa Jirachotrapee, Matthew P. Turner, Prince of Songkla University, Hat Yai, Thailand
- P1-150 Inactivation of *Listeria innocua* on Raw and Ready-to-eat Shrimp by Antimicrobial Coatings and Cryogenic Freezing - TONY JIN, Mingming Guo, Christopher Sommers, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P1-151 Pre-treatments Effects of Aluminium and Other Mineral Levels in Semi-dried Jellyfish Products - YAO-WEN HUANG, Chao Xu, Hui-ping Huang, Xin Chen, Xiaoxiao Zeng, Lu Shen, University of Georgia, Athens, GA, USA
- P1-152 **The Commerce and Quality of Fish Trading: A Study in the Municipal Market of São Francisco Do Conde, Bahia, Brasil** - RYZIA CARDOSO, Simone Argolo, Priscila Campos, Naína Vieira, Alaise Guimarães, Débora Moura, Universidade Federal da Bahia, Salvador, Brazil
- P1-153 Identification of Fish Samples through DNA Barcoding: A Surveillance Study of Public Health Importance - IRSHAD SULAIMAN, Emily Jacobs, Nancy Miranda, Steven Simpson, Khalil Kerdahi, U.S. Food and Drug Administration, Atlanta, GA, USA
- P1-154 The Effect of Heat and Various Salts on the Activity of the Inosinate Monophosphate-degrading Enzyme in Horse Mackerel - HIROKO SEKI, Izumi Ueno, Naoko Hamada-Sato, Tokyo University of Marine Science and Technology, Tokyo, Japan
- Microbial Food Spoilage**
- P1-155 Rapid Detection of Microorganisms in Food and Beverage by Fluorescence - SOPHIE BARRIER, EMD Millipore, Molsheim, France
- P1-156 Changes of Bacterial Growth and Water Activity Values of Sliced Cabbage, Sandwich, and Tofu Stored under Various Temperatures and Humidity Conditions - MYUNG-SUB CHUNG, Chung-Ang University, Ansong, South Korea
- P1-157 Predicting Mold Spoilage on Pastries - DANIELE SOHIER, ADRIA, Quimper, France
- P1-158 Comparison of the Thermal Inactivation Pattern of *Zygosaccharomyces fermentati* Using Bigelow and Weibull Model - BEOM-SEON LEE, Sang-Mo Kang, Jun-Hwan Ryang, Cheong-Tae Kim, Nongshim Co., Ltd., Seoul, South Korea
- P1-159 Challenge Test on Heat-resistant Fungus, *Byssoschlamys striata* Inoculated in Blueberry Juice and Subjected to Heat Treatments - LIHUA FAN, Wilhelmina Kalt, Craig Doucette, Timothy Hughes, Sherry Fillmore, Si Chen, Hong Zhang, Agriculture and Agri-Food Canada, Kentville, NS, Canada
- P1-160 Identifying Bacteria that Cause Spoilage of Fermented Red Hot Pepper Mash - MYRIAM GUTIERREZ, Marlene Janes, Thanhme Nguyen, Skylar White, Louisiana State University, Baton Rouge, LA, USA
- P1-161 **Effect of High Hydrostatic Pressure on Psychrotrophic *Clostridium* spp. Isolated from Spoiled Vacuum-packaged Fresh Beef** - LINDA HO, Lynn M. McMullen, University of Alberta, Edmonton, AB, Canada

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- P1-162 Effect of pH on the Germination of Spores of *Clostridium estertheticum* in Meat Juice Medium - SURAKSHA RAJAGOPAL, Xianqin Yang, Lynn McMullen, Colin Gill, Agriculture & Agri-Food Canada, Lacombe, AB, Canada
- P1-163 Isolation of DNase- and Protease-Producing Bacteria on Catfish Spoilage - GINA ACCUMANNO, Jung-Lim Lee, Delaware State University, Dover, DE, USA
- P1-164 Increased Water Activity Reduced the Thermal Resistance of *Salmonella enterica* in Peanut Butter - YINGSHU HE, Ye Li, Jingyun Yang, Mary Lou Tortorello, Wei Zhang, Illinois Institute of Technology, Bedford Park, IL, USA

## Sanitation

- P1-165 Lethality of Moist Heat and Silver Dihydrogen Citrate Sanitizer Combinations on *Listeria* Strains Adhered to Components of a Deli Meat Slicer - Dinesh Babu, Sabelo Masuku, Elizabeth Martin, PHIL CRANDALL, Corliss O'Bryan, Steven Ricke, University of Arkansas, Fayetteville, AR, USA
- P1-166 Cross-contamination between Deli Foods and Slicers by *Escherichia coli* O157:H7, *Listeria monocytogenes* and *Salmonella*, and Validation of the Antimicrobial Efficacy of Sanitizers - DONG CHEN, Tong Zhao, Michael Doyle, University of Georgia, Griffin, GA, USA
- P1-167 Increasing Shelf Life of Injected Meats by Biofilm Removal - ALEXANDER JOSOWITZ, Mark Wozniak, Eric Dell, Sterilex Corporation, Hunt Valley, MD, USA
- P1-168 Microbiota in Fish Production Facilities and Impact on Growth and Biofilm Formation of *Listeria monocytogenes* - SOLVEIG LANGSRUD, Birgitte Moen, Trond Mørretrø, Even Heir, Nofima, As, Norway
- P1-169 Push-through Sanitation of Peanut Butter Processing Equipment - ELIZABETH GRASSO, Susanne Keller, Nathan Anderson, Stephen Grove, Institute for Food Safety and Health, Bedford Park, IL, USA
- P1-170 Transovarial Transmission of Foodborne Pathogens by the Housefly, *Musca domestica* - MONICA PAVA-RIPOLL, Rachel E. Pearson, Amy K. Miller, George C. Ziobro, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- P1-171 Biofilm Formation by Shiga Toxin-producing *Escherichia coli* and Multidrug-resistant and Susceptible *Salmonella* and Their Inactivation by Sanitizers - ALIYAR FOULADKHAH, Ifigenia Geornaras, John Sofos, Colorado State University, Fort Collins, CO, USA
- P1-172 Efficacy of Chemical Treatments for Control of *Mycobacterium tuberculosis* Biofilms on Various Surfaces - VICTORIA ADETUNJI, Aderemi Kehinde, Olayemi Bolatito, Jinru Chen, University of Ibadan, Ibadan, Nigeria
- P1-173 Benzalkonium Chloride-based Antimicrobial Paper: A New Approach for the Removal of Food Pathogenic Bacteria on Human Hands - ISMAIL FLISS, Benoit Fernandez, Pierre Hudon, Marie-Helene Charest, Nathalie Comeau, Laval University, Quebec, QC, Canada
- P1-174 Enhancement of Slightly Acidic Electrolyzed Water Sanitization Efficacy on Fresh Vegetables by Ultrasonication and Water Wash - Fereidoun Forghani, Myoung-Su Park, Jun Wang, Joong-Hyun Park, Gwang-Hee Kim, Charles Nkufi Tango, Ahmad Rois Mansur, DEOG-HWAN OH, Kangwon National University, Chuncheon, South Korea
- P1-175 Inactivation of Foodborne Bacteria on a Ball-shaped Surface Model Using Bacto Agar by UVC-assisted Titanium Dioxide Photocatalysis - JEONG UN KIM, Keunyoung Yang, Sujeong Kim, Yeh Wei Sun, Jiyong Park, Yonsei University, Seoul, South Korea
- P1-176 Improvement of Microbial Safety of Hard-cooked Eggs Using Pulsed Light - BRAULIO MACIAS RODRIGUEZ, Wade Yang, University of Florida, Gainesville, FL, USA
- P1-177 Assessing Effective Quality Controls of Chlorination in Postharvest Wash Water Sanitation of Fresh Produce - VIVIAN CHONG, University of Massachusetts, Amherst, MA, USA
- P1-178 Variation in Detection Limits of an ATP Bioluminescence Meter between Bacterial Growth Curve Phases - Sommer Vogel, Mahima Tank, NANCY GOODYEAR, University of Massachusetts Lowell, Lowell, MA, USA
- P1-179 An Investigation of Restaurant Food Safety Performance: A Comparison between Ethnic and Non-ethnic Restaurants in Louisiana - YEE MING LEE, Pei Liu, Hui (Michelle) Xu, Auburn University, Auburn, AL, USA
- P1-180 Draft Beer Seller's Perception on Sanitation and Prevalence of Foodborne Pathogens in Draft Beer in Korea - HYE-SUN SHIN, Chung-Ang University, Ansong, South Korea

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## TUESDAY POSTERS 10:00 AM – 6:00 PM

### P2 Pathogens Antimicrobials

Charlotte Convention Center, Exhibit Hall

P2-01 through P2-83 – Authors present

10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.

P2-84 and above – Authors present

2:00 p.m. – 3:00 p.m. and 5:00 p.m. – 6:00 p.m.

### Pathogens

P2-01 Differential Survival of Turkey-derived *Campylobacters* in Vehicles (Feces, Water) of Special Relevance for Pre-harvest Transmission - LESLEY GOOD, Donna Carver, Sophia Kathariou, North Carolina State University, Raleigh, NC, USA

P2-02 WITHDRAWN

P2-03 Influence of Compost Particle Size on Pathogen Survival under Greenhouse Conditions - JUNSHU DIAO, Zhao Chen, Xiuping Jiang, Clemson University, Clemson, SC, USA

P2-04 Survival of *Salmonella* in Food as a Function of Water Activity and Fat Level - AI KATAOKA, Elena Enache, Carla Napier, Richard Podolak, Melinda Hayman, Glenn Black, Philip Elliott, Richard Whiting, Grocery Manufacturers Association, Washington, D.C., USA

P2-05 Modeling the Physiological Response of *Salmonella* to Heat Shock during Slow Cooking Processes - LAURA CARROLL, Teresa Bergholz, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-06 Heat Resistance of *Salmonella* Tennessee in Model Peanut Paste Formulations at Four Different Levels of Fat and Water Activity - ELENA ENACHE, Ai Kataoka, Melinda Hayman, Richard Podolak, Glenn Black, Philip Elliott, Richard Whiting, Grocery Manufacturers Association, Washington, D.C., USA

P2-07 Thermal Inactivation of Desiccation-adapted *Salmonella* spp. in Aged Chicken Litter - ZHAO CHEN, Junshu Diao, Claudia Ionita, Xiuping Jiang, Clemson University, Clemson, SC, USA

P2-08 The Effect of UV Radiation on Survival of *Salmonella enterica* in Dried Manure Dust - RUTH ONI, Manan Sharma, Shirley Micallef, Robert Buchanan, University of Maryland, College Park, MD, USA

P2-09 A Meta-analysis of *Salmonella* Inactivation Parameters and Data for Thermal Pasteurization of Low-moisture Foods - DANIELLE SMITH, Ian Hildebrandt, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-10 Sodium Chloride Habituation Increased Thermal Resistance and Caco-2 Cell Invasion of *Salmonella* - SOOYEON AHN, Hyunjoo Yoon, Mi-Hwa Oh, Beomyoung Park, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

P2-11 Mitigation of *Salmonella* in Cattle Lymph Nodes in a Commercial Feedlot Setting Using NP51, a *Lactobacillus*-based Pre-harvest Intervention - LACEY GUILLEN, Jessie Vipham, Ansen Pond, Nathan Pond, Guy Loneragan, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P2-12 Confirmation and Typing of *Salmonella* by Genome Sequence Scanning in Presumptive Positive Food Samples - SRINIVAS RAMASWAMY, Ekaterina Prozanova, Mohan Manoj Kumar, Maura Faggart, Mikhail Safranovitch, Gene Malkin, Shilpi Vyas, Katarzyna Crissy, Jimmy Symonds, Rudolf Gilmanshin, Pathogenetix, Woburn, MA, USA

P2-13 CRISPR-MVLST Identifies Populations of *Salmonella* Typhimurium with Differences in Distribution and Antibiotic Resistance - MICHAEL DIMARZIO, Nikki Shariat, Subhashinie Kariyawasam, Edward Dudley, The Pennsylvania State University, University Park, PA, USA

P2-14 Evaluation of the 3M™ Molecular Detection Assay (MDA) *Salmonella* for the Detection of *Salmonella* in a Variety of Foods: Collaborative Study - PATRICK BIRD, DeAnn Benesh, Kiel Fisher, Travis Huffman, Megan Boyle, M. Joseph Benzinger, Jonathon Flannery, Paige Bedinghaus, Erin Crowley, John David, Q Laboratories, Inc., Cincinnati, OH, USA

P2-15 A Comparative Evaluation of the 3M™ Petrifilm™ *Salmonella* Express System for the Detection of *Salmonella* Species in Food and Environmental Surfaces - ERIN CROWLEY, Patrick Bird, Megan Boyle, M. Joseph Benzinger, Kiel Fisher, Jonathan Flannery, Paige Bedinghaus, James Agin, David Goins, Robert Jechorek, Q Laboratories, Inc., Cincinnati, OH, USA

P2-16 Evaluation of the 3M™ Petrifilm™ *Salmonella* Express System for the Detection of *Salmonella* Species in Food, Feed, Environmental Surfaces and Strain Testing Results - PATRICK MACH, 3M, St. Paul, MN, USA

P2-17 Performance of the 3M™ Molecular Detection Assay *Salmonella* as Compared to the Canadian Reference Method MFHPB-20 - CHRISTIAN BLYTH, 3M Canada Corporation, London, ON, Canada

P2-18 Evaluation of the VIDAS® UP *Salmonella* Assay (SPT) for the Detection of *Salmonella* in a Variety of Foods and Environmental Surfaces: Collaborative Study - PATRICK BIRD, Ron Johnson, Kiel Fisher, Travis Huffman, Megan Boyle, M. Joseph Benzinger, Jonathan Flannery, Paige Bedinghaus, Erin Crowley, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA

P2-19 A Comparative Evaluation of the BAX® System Real-time PCR Assay for *Salmonella* and the BAX® System PCR Assay for *Salmonella* 2 for Detecting *Salmonella* Enteritidis in Shell Eggs - ERIN CROWLEY, Morgan Wallace, Patrick Bird, Kiel Fisher, Travis Huffman, M. Joseph Benzinger, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA

P2-20 Habituation on Vegetable Surfaces Affects the Resistance of *Listeria monocytogenes* and *Salmonella* to Acidic, Osmotic and Thermal Stress - SOFIA POIMENIDOU, Danae-Natalia Chatzithoma, George-John Nychas, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece

P2-21 Diversity and Stability of Heat-stress Adaptation in 37 Strains of *Listeria monocytogenes* - Priyanka Jangam, Kamlesh Soni, RAMAKRISHNA NANNAPANENI, Mississippi State University, Mississippi State, MS, USA

P2-22 Formation of Alkali-stress Resistant Phenotypes of *Listeria monocytogenes* - POOJA PANDARE, Kamlesh Soni, Ramakrishna Nannapaneni, Mississippi State University, Mississippi State, MS, USA

P2-23 Filamentation of *Listeria monocytogenes* in the Presence of Sublethal Dose of Bacteriocins - XIAOJI LIU, Lynn McMullen, Petr Miller, University of Alberta, Edmonton, AB, Canada

P2-24 Development and Characterization of Murinized *Listeria monocytogenes* Strains Carrying the Most Common Forms of Internalin A Premature Stop Codons - ANNA VAN STELTEN, Jessica Heiden, Jessica Chen, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA

P2-25 Ability of Virulence Attenuated *Listeria monocytogenes* Strains Secreting Truncated Forms of InlA of Different Lengths to Stimulate Cytokine and Chemokine Production by Intestinal Epithelial Cells - JESSICA HEIDEN, Anna Van Stelten, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA

P2-26 Transcriptome Based Comparison of *Listeria monocytogenes* Strains with Different Cold Adaptation Proficiencies - Carolina Arguedas-Villa, Roger Stephan, TAURAI TASARA, University of Zurich, Zurich, Switzerland

P2-27 A Predictive Model to Determine the Combined Effects of Temperature, Sodium Chloride and Green Tea on Thermal Inactivation of *Listeria monocytogenes* in Ground Turkey - VIJAY JUNEJA, Jimena Garcia Davila, Julio Cesar Lopez Romero, Etna Aida Pena Ramos, Juan Pedro Camou Arriola, Martin Valenzuela Melendres, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

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- P2-28 **Transposon Mutant Library Reveals Genes Involved in Biofilm Formation by *Listeria monocytogenes* 568 at a Simulated Food Plant Environmental Temperature of 15°C** - MARTA PIERCEY, Lori Burrows, Timothy Ells, Lisbeth Truelstrup Hansen, Dalhousie University, Halifax, NS, Canada
- P2-29 **Survival and Growth of Outbreak Strains of *Listeria monocytogenes* on Cantaloupe** - MIRA RAKIC MARTINEZ, Robin Siletzky, Sophia Kathariou, North Carolina State University, Raleigh, NC, USA
- P2-30 **Whole Genome Sequencing and Phenotypic Characterization of *Listeria monocytogenes* Isolates from the 2011 Cantaloupe Outbreak Reveals Three Distinct Genetic Clades with Different Phenotypic Traits** - JESSICA CHEN, Anna Van Stelten, Craig Cummings, Clarence Lee, Elizabeth Levandowsky, Hugh Maguire, Henk den Bakker, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- P2-31 **Inter-strain Competition Affects Growth and Detection of *Listeria monocytogenes* or *Salmonella* in Foods by ISO Methods** - EVANGELIA ZILELIDOU, Evanthia Manthou, Antonia Gounadaki, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P2-32 **Characterization and Rapid Detection of Cantaloupe-associated *Listeria monocytogenes*** - JEFFREY CHANDLER, Wanda Manley, Bledar Bisha, Jaclyn Adkins, Alma Perez-Mendez, Shannon Coleman, Charles Henry, Lawrence Goodridge, Colorado State University, Fort Collins, CO, USA
- P2-33 **Development and Application of a Rapid Lateral Flow Test Strip-based Method for the Detection of *Listeria monocytogenes* in Food** - MARK MULDOON, Verapaz Gonzalez, Ann-Christine Allen, Zheng Jiang, Meredith Sutzko, Romer Lab Technologies, Inc., Newark, DE, USA
- P2-34 **Validation of a Test System to Detect Low Levels of *Listeria monocytogenes* in Composite Environmental Sponges and 125G Ready-to-Eat Meat Samples** - MEREDITH SUTZKO, Zheng Jiang, Romer Labs Technology, Inc., Newark, DE, USA
- P2-35 **A Comparative Evaluation of the ANSR™ *Listeria* Assay for the Detection of *Listeria* Species on Environmental Surfaces** - Kiel Fisher, Megan Boyle, Erin Crowley, PATRICK BIRD, David Goins, Michael Wendorf, Emily Feldpausch, Preetha Biswas, Mark Mozola, Jennifer Rice, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-36 **A Comparative Evaluation of the 3M™ Molecular Detection Assay *Listeria* for the Detection of *Listeria* species in Foods** - ERIN CROWLEY, Patrick Bird, Travis Huffman, Kiel Fisher, Megan Boyle, Marc Juenger, M. Joseph Benzinger, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-37 **Effect of Storage Times and Temperatures on *Escherichia coli* Isolation** - ROBERT BARLOW, Kate McMillan, CSIRO, Brisbane, Australia
- P2-38 **Investigation of Adherence Strategies of Environmental *Escherichia coli* to Food Samples and Human Epithelial Cells** - KRYSTAL SHORTLIDGE, Sarah Markland, Kyle LeStrange, Manan Sharma, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P2-39 **Determination of Heat and Pressure Resistance of Verotoxin Positive and Negative *Escherichia coli*** - YANG LIU, Alexander Gill, Lynn McMullen, Michael Gänzle, University of Alberta, Edmonton, AB, Canada
- P2-40 **Polynucleotide Phosphorylase is Required for *Escherichia coli* O157:H7 Growth at Low Temperature** - JIA HU, Warrie Means, Richard McCormick, Mei-Jun Zhu, University of Wyoming, Laramie, WY, USA
- P2-41 **Thermal Resistance Parameters for Stationary Phase and Acid-adapted *Escherichia coli* O157:H7 in Apple and Carrot Juice Blends** - JESSIE USAGA, Randy W. Worobo, Olga I. Padilla-Zakour, Cornell University, Geneva, NY, USA
- P2-42 **Comparison and Correlation of *Escherichia coli* O157-associated Virulence Genes in Beef Trim and Variety Meats** - WALTER HILL, Mansour Samadpour, Institute for Environmental Health and Consulting Group, Lake Forest Park, WA, USA
- P2-43 **Correlation of *Escherichia coli* O157-associated Virulence Genes in Beef Trim with Precipitation Levels and Temperature** - WALTER HILL, Mansour Samadpour, Institute for Environmental Health and Consulting Group, Lake Forest Park, WA, USA
- P2-44 **Dietary Effects on *Escherichia coli* O157:H7 Shedding in Beef Cattle during Transportation** - LIANG ZHAO, Patricia Tyler, Thomas McCaskey, Darrell Rankins, Luxin Wang, Auburn University, Auburn, AL, USA
- P2-45 **Synergistic Interaction in Dual-species Biofilms Formation by *Escherichia coli* O157:H7 and *Ralstonia* spp.** - NANCY (TONG) LIU, Xiangwu Nou, Gary Baughan, Alan Lefcourt, Daniel Shelton, Y. Martin Lo, University of Maryland, College Park, MD, USA
- P2-46 **Intra- and Inter-strain Differences in Fitness of *Escherichia coli* O157:H7 to Protozoan Predation and Survival in Soil** - SUBBARAO RAVVA, Chester Sarreal, Robert Mandrell, U.S. Department of Agriculture-ARS, Albany, CA, USA
- P2-47 **Persistence of *Escherichia coli* and Attenuated *Escherichia coli* O157:H7 in Manure-enriched Soils in the Eastern Shore of Maryland** - CORRIE COTTON, Fawzy Hashem, Manan Sharma, Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P2-48 **Comparison of Shiga Toxin Subtypes and Chromosomal Insertion Sites in *Escherichia coli* O157 Isolated from Australia and the USA** - Glen Mellor, Thomas Besser, Margaret Davis, Brittany Beavis, WooKyung Jung, Helen Smith, Amy Jennison, Narelle Fegan, KARI GOBIUS, CSIRO, Brisbane, Australia
- P2-49 **Exopolysaccharide and Attachment-related Protein Production by O157 and non-O157 Shiga Toxin-producing *Escherichia coli* Strains** - KYRIAKI CHATZIKYRIAKIDOU, Renae Geier, Steve Ingham, Barbara Ingham, University of Wisconsin-Madison, Madison, WI, USA
- P2-50 **Identification of Contamination Sources and Prevalence of *Escherichia coli* O157:H7 and *Salmonella* on Small-scale Cow/Calf Operations in Oklahoma, Texas and Louisiana** - Divya Jaroni, KEITH SULLIVAN, Mindy M. Brashears, Todd Brashears, Guy Loneragan, Chris Richards, Ansen Pond, Mark Miller, Oklahoma State University, Stillwater, OK, USA
- P2-51 **Detection of Viable *Escherichia coli* O157:H7 in Apple Juice and Spinach Wash Water Using a Concentrating Pipette and Ethidium Monoazide-real-time PCR** - YARUI LIU, Pamela Murowchick, Andrew Page, Azlin Mustapha, University of Missouri, Columbia, MO, USA
- P2-52 **Microbiological Profile of Dough Systems during Pita Chips, Pretzels and Pretzel Products Production** - BALASUBRAHMANYAM KOTTAPALLI, Denise Becker, Shecoya White, Yanyan Huang, Stefanie Gilbreth, ConAgra Foods, Omaha, NE, USA
- P2-53 **Comparative Evaluation of the 3M™ Molecular Detection Assay *Escherichia coli* O157 (including H7) for the Detection of *Escherichia coli* O157 in Raw Ground Beef** - GABRIELA STANCANELLI, Julián De la Torre, Luciano Linares, Emanuel Ortega, Virginia Aliverti, Victoria Brusa, Lucia Galli, Pilar Peral Garcia, Julio Copes, Gerado Leotta, 3M Food Safety, Buenos Aires, Argentina

- P2-54 Use of a Rapid PCR Method to Detect *Escherichia coli* O157:H7 and Non-O157:H7 Shiga Toxin-producing *Escherichia coli* (STEC) in 25-gram Samples of Two Dry Pet Food Formulations - STEVEN HOELZER, Monica Tadler, Andrew Farnum, Teresa Brodeur, Adam Barnes, Pheakdey Ith, DuPont Nutrition and Health, Wilmington, DE, USA
- P2-55 Development and Validation of Predictive Models for Growth of Non-O157 Shiga-toxigenic *Escherichia coli* (STEC) and *Salmonella* spp. in Ground Beef, Lettuce, and Non-fat Dry Milk - Brandon Speight, HARSHAVARDHAN THIPPAREDDI, Jihan Cepeda, Nigel Harper, Randall Phebus, Andre Senecal, John Luchansky, Anna Porto-Fett, University of Nebraska-Lincoln, Lincoln, NE, USA
- P2-56 Cold-tolerance of Individual or Combined Non-O157 and O157 Shiga Toxin-producing *Escherichia coli* Strains in Ground Veal at 10°C - KYRIAKI CHATZIKYRIAKIDOU, Renae Geier, Paola Flores Verdad Ixta, Katie Scharenbroch, Steve Ingham, Barbara Ingham, University of Wisconsin-Madison, Madison, WI, USA
- P2-57 Pathogenicity Islands in Shiga Toxin-producing *Escherichia coli* O26, O103 and O111 Isolates from Humans and Animals - WENTING JU, Jinling Shen, Lydia Rump, Magaly Toro, Shaohua Zhao, Jianghong Meng, University of Maryland, College Park, MD, USA
- P2-58 Differential Induction of Shiga Toxin 2-encoding Bacteriophages in Shiga-toxin Producing *Escherichia coli* - Lejla Imamovic, Elisenda Ballesté, MAITE MUNIESA, University of Barcelona, Barcelona, Spain
- P2-59 Heat Resistance and Biofilm Formation of *Escherichia coli* Serotypes at Various NaCl Concentrations - HEEYOUNG LEE, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- P2-60 Attachment of Shiga Toxigenic *Escherichia coli* (STEC) on Stainless Steel Hex Nuts in Minimal and Full Nutrient Broth - AMY PARKS, Kendra Nightingale, J. Chance Brooks, Michael San Francisco, Leslie D. Thompson, Guy Loneragan, Mindy M. Brashears, Texas Tech University, Lubbock, TX, USA
- P2-61 Free Shiga Toxin 2-encoding Bacteriophages from Food to Feces and Beyond - MAITE MUNIESA, Alexandre Martinez-Castillo, Marta Colomer-Lluch, Anna Allue-Guardia, University of Barcelona, Barcelona, Spain
- P2-62 The Effect of Weaning Stress on the Levels of Shiga Toxin-producing *Escherichia coli* and Fecal Butyrate-producing Bacteria in Young Calves - LIANG ZHAO, Patricia Tyler, Darrell Rankins, Thomas McCaskey, Luxin Wang, Auburn University, Auburn, AL, USA
- P2-63 Adherence to and Invasion of Bovine and Human Colonic Epithelial Cells by Non-O157 Shiga Toxin-producing *Escherichia coli* - Zachary Stromberg, Gentry Lewis, RODNEY MOXLEY, University of Nebraska-Lincoln, Lincoln, NE, USA
- P2-64 Prevalence of Non-O157 Shiga Toxin-producing *Escherichia coli* Shed by Beef Calves before and after Weaning - CHRISTINE PALMER, Christy Bratcher, Manpreet Singh, Luxin Wang, Auburn University, Auburn, AL, USA
- P2-65 2012 Voluntary Non-O157:H7 STEC Proficiency Testing Study - CHRISTOPHER C. SNABES, Daniel C. Edson, Sue Empson, Heather S. Jordan, B. Phil., American Proficiency Institute, Traverse City, MI, USA
- P2-66 Animal Age is a Factor to Target Developing Pre-harvest Intervention to Reduce Shiga Toxin-producing *Escherichia coli* - Man Hwan Oh, Maria Cevallos, Min Young Kang, Seung Cheon Hong, Mara Brueck, Matthew Taylor, Jennifer Fore, KWANG CHEOL JEONG, University of Florida, Gainesville, FL, USA
- P2-67 Evaluation of NP51 Feed Additive in a Research Feedlot Facility and Its Effectiveness in Reducing Shiga Toxin-producing *Escherichia coli* (STEC) in Cattle Feces - NATHAN POND, Ansen Pond, Lacey Guillen, Jessie Vipham, Bradley Johnson, Guy Loneragan, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P2-68 Efficacy of Lactic Acid, Hot Water, and Acidified Sodium Chlorite for the Reduction of Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) Utilizing a Hot Carcass Model and *Escherichia coli* O157:H7 as an Indicator - NANDITHA JASTI, W. Evan Chaney, Alejandro Echeverry, Guy Loneragan, Kendra Nightingale, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P2-69 Efficacy of Lactic Acid, Hot Water, and Acidified Sodium Chlorite for the Reduction of Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) Utilizing Chilled Beef Subprimals and *Escherichia coli* O157:H7 as an Indicator - NANDITHA JASTI, W. Evan Chaney, Alejandro Echeverry, Guy Loneragan, Kendra Nightingale, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P2-70 Fate of Shiga Toxin-producing *Escherichia coli* during Storage at Different Temperatures of Gamma Irradiated Spinach (*Tetragonia expansa*) - Ana Carolina Bortolossi Rezende, Maria Teresa Destro, Bernadette Franco, MARIZA LANDGRAF, University of São Paulo, São Paulo, Brazil
- P2-71 Gamma Radiation Inactivation of Non-O157:H7 Shiga Toxin-producing *Escherichia coli* in Foods - Christopher Sommers, O. Joseph Scullen, CHENG-AN HWANG, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P2-72 Differentiating Non-O157:H7 STEC Colonies from Competing Background Microflora in Ground Beef Broth by Hyperspectral Imaging - BOB WINDHAM, Seung-Chul Yoon, Jennifer Haley, Scott Ladely, Bosson Park, Kurt Lawrence, Neelam Narang, William Cray, U.S. Department of Agriculture-ARS, Athens, GA, USA
- P2-73 Shiga Toxin-producing *Escherichia coli* H Antigen Clustering Evidenced by the CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) Array - MAGALY TORO, Ruth Timme, Wenting Ju, Guojie Cao, Marc Allard, Jianghong Meng, University of Maryland, College Park, MD, USA
- P2-74 Rapid and Sensitive Detection of Shiga Toxin-producing *Escherichia coli* in Environmental Samples by Multiplex PCR - SHEFALI DOBHAL, Chris Timmons, Guodong Zhang, Charles Rohla, Mike Smith, Li Ma, Oklahoma State University, Stillwater, OK, USA
- P2-75 Reductions of *Escherichia coli*, *Staphylococcus aureus*, and *Bacillus cereus* on Seasoned Dried File Fish Using UV and COP as Light Sterilization - Hyun-Ha Song, Song-Yi Choi, Angela Ha, Shin Young Park, SANG-DO HA, Chung-Ang University, Ansong-Si, South Korea
- P2-76 Optimization for Synergistic Effects of Combined Chlorine and Sonication on *Bacillus cereus* in Dried Laver Using a Predictive Reduction Model - Shin Young Park, Song-Yi Choi, Angela Ha, SANG-DO HA, Chung-Ang University, Ansong-Si, South Korea
- P2-77 Virulence Testing of Multi-drug Resistant *Staphylococcus aureus* Isolated from Meat and Clinical Samples - Decima Washington, Shurrita Davis, JANAK KHATIWADA, Doug Smith, Leonard Williams, North Carolina A&T State University, Kannapolis, NC, USA
- P2-78 Effects of NaCl on Antibiotic Resistance and Biofilm Formation of *Staphylococcus aureus* - SEJEONG KIM, Sooyeon Ahn, Soomin Lee, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- P2-79 The Effect of Temperature and Water Activity on Kinetic Behavior of *Staphylococcus aureus* on Cheese - HYUNJJI JOE, Kyungmi Kim, Heeyoung Lee, Soomin Lee, Sejeong Kim, Soonmin Oh, Jin San Moon, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

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- P2-80 Predictive Models to Describe the Kinetic Behavior of NaCl-habituated and Non-habituated *Staphylococcus aureus* in Sweet Pumpkin Salad - KYUNGMI KIM, Ahreum Park, Kun Sang Park, SoonHo Lee, Joon Il Cho, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- P2-81 A Comparative Analysis of Early Transcriptional Responses in Human Keratinocytes (HEK001), Intestinal Epithelial (Caco-2), and Pulmonary (HBE4) Cells after Infection with the Spores of Avirulent Strain of *Bacillus anthracis* - SAEED KHAN, Kidon Sung, Tao Han, James Fuscoe, Mohamed Nawaz, Saeed Khan, U.S. Food and Drug Administration-NCTR, Jefferson, AR, USA
- P2-82 Inactivation of Nonproteolytic Strains of *Clostridium botulinum* Spores by High Pressure and Thermal Processing - TRAVIS MORRISSEY, Guy Skinner, Viviana Loeza, Eduardo Patazca, Rukma Reddy, Kathiravan Krishnamurthy, John Larkin, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P2-83 Prevalence of *Clostridium difficile* in Korean Ground Meat Products - Hye-Jin Jang, SU-JEONG HA, Se-Wook Oh, Korea Food Research Institute, Seoul, South Korea
- P2-84 Determining the Fate of *Clostridium difficile* in Animal Manure-based Compost - MUTHU DHARMASENA, Xiuping Jiang, Clemson University, Clemson, SC, USA
- P2-85 Field Trial Study on BAX® System Real-time PCR Assay for the Detection of *Shigella* in China FDA Testing Foods - Weidong Xu, Yiling Fan, Ying Bao, Jason Jiadong Wang, LINDA XUAN PENG, DuPont Nutrition & Health, Wilmington, DE, USA
- P2-86 WITHDRAWN
- P2-87 Identification and Subtyping of *Cronobacter sakazakii* in Food Commodities - STEPHANIE HORTON, Jaheon Koo, U.S. Food and Drug Administration, Jefferson, AR, USA
- P2-88 Seroprevalence and Risk Factors of *Toxoplasma gondii* Infection in Meat Products Destined for Human Consumption - MIAO GUO, Abani Pradhan, University of Maryland, College Park, MD, USA
- P2-89 Identification of Zoonotic Foodborne *Cryptosporidium* and *Giardia* Domestic and International: Species and Risk Factors - XUNDE LI, Shouyi Chen, Chengling Xiao, Juntao Li, Bruce Hoar, Edward Atwill, University of California-Davis, Davis, CA, USA
- P2-90 Comparison of Gel Electrophoresis and Microfluidic Separation of PCR Products for Identification of Pathogenic *Vibrio* spp. - WILLIS FEDIO, Jessica Jones, Paul Browning, Lyssa White, Juan Olea, Ruiqing Pamboukian, Angelo DePaola, New Mexico State University, Las Cruces, NM, USA
- P2-91 Ecology of *Vibrio cholerae* in Florida Bays - LEI FANG, Jessica Lepper, Anita Wright, University of Florida, Gainesville, FL, USA
- P2-92 Inactivation of *Vibrio vulnificus* in Shucked Oysters Using Natural Antimicrobials - BARAKAT MAHMOUD, Randy Coker, Patricia Knight, Mississippi State University, Pascagoula, MS, USA
- P2-93 Fourteen-day Natural Relay to High Salinity Seawater Decreases the Presence of *Vibrio parahaemolyticus* in Oysters (*Crassostrea virginica*) - MICHAEL TAYLOR, Steve Jones, Jong Yu, University of New Hampshire, Durham, NH, USA
- P2-94 Development and Evaluation of an Immunochromatographic Rapid Assay for the Detection of Pathogenic *Vibrio parahaemolyticus* in Food - Heike Wulff, LISA JOHN, Michael Buelte, Joerg Slaghuis, Merck Millipore, Darmstadt, Germany
- P2-95 Thermal Inactivation of Human Norovirus Surrogates in Blue Mussels (*Mytilus edulis*) - SANDRA LEISER, Hayriye Bozkurt, Doris D'Souza, P. Michael Davidson, University of Hohenheim, Stuttgart, Germany
- P2-96 Inactivation of Norovirus Surrogate and Hepatitis A Virus in Suspension and in Dried Mussels Using Thermal Treatment - Shin Young Park, Se-Hee Jeong, Se-Ra Oh, Na-Young Lee, SANG-DO HA, Chung-Ang University, Ansong-Si, South Korea
- P2-97 Modeling Norovirus Transmission from an Episode of Vomiting - GRACE TUNG, Dominic Libera, Francis de los Reyes, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-98 Characterization of Nucleic Acid Aptamers with Broad Reactivity to Human Norovirus Strains - BLANCA ESCUDERO-ABARCA, Soohwan Suh, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-99 Evaluation of a Novel Surface Sampling Wipe for Recovery of Human Noroviruses Prior to Detection Using RT-QPCR - GRACE TUNG, Caleb Wilson, Lee-Ann Jaykus, Arnaud Ganee, Sylvanie Cassard, Claude Mabilat, North Carolina State University, Raleigh, NC, USA
- P2-100 Comparison of Human Norovirus Recovery using Magnetic Beads Coated with Porcine Gastric Mucins or Monoclonal Antibodies - CLAIRE LANGLEY, University of Georgia Center for Food Safety, Athens, GA, USA
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- P2-102 Characterization of *Campylobacter coli* and *jejuni* Strains Isolated from Turkeys - MARIA CRESPO-RODRIGUEZ, Sophia Kathariou, Jesse L. Grimes, Nelson Cox, R. Jeff Buhr, Doug Smith, North Carolina State University, Raleigh, NC, USA
- P2-103 Differential Protein Expression between Poor and Robust Colonizing *Campylobacter jejuni* Isolates - KIDON SUNG, Yuan Gao, Li-Rong Yu, Saeed Khan, Kelli Hielt, Eric Line, Ohgew Kwon, Carl Cerniglia, U.S. Food and Drug Administration-NCTR, Jefferson, AR, USA
- P2-104 Novel Plasmid Conferring Kanamycin and Tetracycline Resistance in Turkey-derived *Campylobacter jejuni* 11601MD - MARIA CRESPO-RODRIGUEZ, Eric Altermann, Robin Siletzky, Sophia Kathariou, North Carolina State University, Raleigh, NC, USA
- P2-105 Development of a Selective Enrichment Broth Supplemented with Bacteriological Charcoal and a High Concentration of Polymyxin B for the Detection of *Campylobacter jejuni* and *Campylobacter coli* in Chicken Carcass Rinse - Jung-Whan Chon, Jin-Hyeok Yim, Jun-Ho Park, Hong-Seok Kim, Dong-Hyeon Kim, Jong-Soo Lim, Kwang-Young Song, KUN-HO SEO, Konkuk University, Gwangjin-gu, Seoul, South Korea
- P2-106 A Comparative Evaluation of the Invisible Sentinel *Campylobacter* Assay for the Detection of *Campylobacter* Species in Chicken Carcass Rinsates - ERIN CROWLEY, Patrick Bird, Kiel Fisher, Katherine Goetz, M. Joseph Benzinger, Marc Juenger, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-107 Improvement of Karmali Agar by Addition of Polymyxin B for the Detection of *Campylobacter jejuni* and *Campylobacter coli* in Whole-Chicken Carcass Rinse - Jin-Hyeok Yim, Jung-Whan Chon, Jun-Ho Park, Dong-Hyeon Kim, Hong-Seok Kim, Jong-Soo Lim, KUN-HO SEO, Konkuk University, Seoul, South Korea

- P2-108 Rapid Detection of *Campylobacter jejuni* in Poultry Products Using Quantum Dots and Nanobeads Based Fluorescent Immunoassay - HONG WANG, Yanbin Li, Michael Slavik, University of Arkansas, Fayetteville, AR, USA
- P2-109 A Comparative Evaluation of the bioMérieux™ TEMPO® AC for the Enumeration of Total Viable Count in a Variety of Foods - ERIN CROWLEY, Patrick Bird, Travis Huffman, Jonathan Flannery, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-110 100K Foodborne Pathogen Genome Project - LENORE KELLY, Steffen Mueller, Bart Weimer, Agilent Technologies, Santa Clara, CA, USA
- P2-111 Effect of Matrix on Food Microbiology Proficiency Testing Samples - CHRISTOPHER C. SNABES, Daniel C. Edson, Sue Empson, Heather S. Jordan, B. Phil., Susan A. Styles, American Proficiency Institute, Traverse City, MI, USA
- ## Antimicrobials
- P2-112 Identification of a Second Bacteriocin Produced by *Enterococcus mundtii* CUGF08 May be Involved in the Self-lethality Phenotype - GISELLE KRISTI GURON, David Manns, John Churey, Randy Worobo, Cornell University, Geneva, NY, USA
- P2-113 Biological Control of Hydrogen Sulfide-producing Bacteria in Raw Poultry By-Products and on Surfaces of Rendering Plant - CHAO GONG, Spencer Heringa, Randhir Singh, Jinkyung Kim, Xiuping Jiang, Clemson University, Clemson, SC, USA
- P2-114 Inhibition of Foodborne Spoilage Organisms in Low pH Food Segment Using Cultured Sugar - EELCO HEINTZ, Saurabh Kumar, Olav Sliemers, Purac Biochem, Gorinchem, The Netherlands
- P2-115 Reduction of Artificial *Salmonella* Typhimurium Contamination on Stainless Steel by Application of Bacteriophage - CHRISTOPHER HARTMAN, W.T. Evert Ting, Purdue University, Hammond, IN, USA
- P2-116 Isolation and Identification of Bacteriocinogenic Strain of *Lactobacillus plantarum* with Potential Beneficial Properties from Donkey Milk - SVETOSLAV TODOROV, Ander Murua, Antonio D.S. Vieira, Rafael C.R. Martinez, Avreljia Cencic, Bernadette Franco, Universidade de São Paulo, São Paulo, Brazil
- P2-117 Characterization of Bacteriocin Production, Safety and Technological Potential of Two *Enterococcus faecium* Strains Isolated from Brazilian Artisanal Cheeses - Karina M.O. dos Santos, Antonio D.S. Vieira, Jacqueline da S. Oliveira, Cíntia R.C. Rocha, Ana C.S. Lopes, Laura M. Bruno, Maria F. Borges, Bernadette Franco, SVETOSLAV TODOROV, Universidade de São Paulo, São Paulo, Brazil
- P2-118 Control of *Listeria monocytogenes* by Bacteriocins Produced by *Lactobacillus curvatus* MBSa2 during Ripening of Salami - Matheus Barbosa, SVETOSLAV TODOROV, Bernadette Franco, Universidade de São Paulo, São Paulo, Brazil
- P2-119 Antimicrobial Activity of Lactiguard® against Foodborne Pathogens in Laboratory Media - ABDOLLAH KHODAMMOHAMMADI, Qingli Zhang, David Campos, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P2-120 Antimicrobial Activity of Apple Skin Polyphenol and Thyme Essential Oil in Acai Edible Films and Their Effects on Film Properties - PAULA J. P. ESPITIA, Roberto Avena-Bustillos, Wen-Xian Du, Reinaldo Teofilo, Tina Williams, Delilah Wood, Tara McHugh, Nilda F.F. Soares, Federal University of Vicosa, Vicosa, Brazil
- P2-121 Evaluation of Microbiological Safety for Collagen Foods in Korea - SOOYEON AHN, Sunah Lee, Soonyoung Choi, Min Jung Moon, So Yeon Jin, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- P2-122 Effects of Grape Seed Extract on the Growth of Top Six Non-O157 Shiga Toxin-producing *Escherichia coli* - Sarena Olsen, Jia Hu, YANSONG XUE, Mei-Jun Zhu, University of Wyoming, Laramie, WY, USA
- P2-123 Effect of Commercial Natural Antimicrobials Based on White Mustard and Citrus on Foodborne Pathogens and Spoilage Microorganisms - EMEFA MONU, Chayapa Techathuvanana, Jairus David, P. Michael Davidson, University of Tennessee, Knoxville, TN, USA
- P2-124 Antimicrobial Effect of Mexican Oregano Essential Oil in Combination with Olive Oil against Foodborne Pathogens - Norma Bolivar Jacobo, Anahi Levario Gomez, Nestor Gutierrez Mendez, Raul Avila-Sosa, Aurelio Lopez-Malo, GUADALUPE NEVAREZ-MOORILLON, Universidad Autonoma de Chihuahua, Chihuahua, Mexico
- P2-125 Antibacterial Activity of Red Cactus Pear (*Opuntia humifusa*) and Green Cactus Pear (*Opuntia ficusindica*) against *Escherichia coli* O157:H7 - SAEED HAYEK, North Carolina A&T State University, Greensboro, NC, USA
- P2-126 Use of Plant-derived Essential Oil Compounds, Naturally-occurring Apple Aroma Compounds and Apple Juice Flavoring Mixtures to Control *Escherichia coli* O157:H7 - Mona Kumar, ROBERT WILLIAMS, Renee Boyer, Sean O'Keefe, Virginia Tech, Blacksburg, VA, USA
- P2-127 Efficacy of Roselle (*Hibiscus sabdariffa*) Calyx Formulations against *Escherichia coli* O157:H7 on Bagged Organic Leafy Greens - Divya Jaroni, BUDDHINI JAYASUNDERA, Jordan Denton, Sadhana Ravishankar, Oklahoma State University, Stillwater, OK, USA
- P2-128 Antibacterial Effects of Olive, Apple and Grapeseed Extracts against *Escherichia coli* O157:H7 on Organic Leafy Greens Stored at 4°C - BUDDHINI JAYASUNDERA, Divya Jaroni, Sadhana Ravishankar, Mendel Friedman, Oklahoma State University, Stillwater, OK, USA
- P2-129 Comparison of Nitrite Derived from Natural and Synthetic Sources on the Inhibition of *Clostridium perfringens* during Extended Cooling of Turkey Breast - KATHLEEN GLASS, Di Wang, Katherine Kennedy, University of Wisconsin-Madison, Madison, WI, USA
- P2-130 Inhibition of Spoilage Yeasts by Spice Essential Oils and Their Components - AUDRA WALLIS, Faith Critzer, Emeffa Monu, P. Michael Davidson, University of Tennessee, Knoxville, TN, USA
- P2-131 Antimicrobial and Antioxidant Capacity of Peumo (*Cryptocarya alba*) and Arrayan (*Luma apiculata*) Leaves and Fruits - WENDY FRANCO, Lida Fuentes, Monika Valdenegro, Carlos Figueroa, Pontificia Universidad Catolica de Chile, Santiago, Chile
- P2-132 Antibacterial and Antioxidant Activities of Methanolic Extracts of Five Varieties of Nopal Cactus - EDUARDO SANCHEZ, Jorge Davila-Aviña, Norma Heredia, Rogoberto Vazquez-Alvarado, Santos Garcia, Universidad Autonoma de Nuevo Leon, Monterrey, Mexico
- P2-133 Antifungal Effect of Starch Edible Films Containing Mexican Oregano (*Lippia berlandieri* Schauer) Essential Oil and Different pH Values - RAUL AVILA-SOSA, Addi Navarro-Cruz, Obdulia Vera-Lopez, Jose Ortiz-Lopez, Patricia Aguilar-Alonso, Universidad Autónoma de Puebla, Puebla, Mexico

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- P2-134 Allyl Isothiocyanate Reduces Foodborne Pathogens on the Surface of Whole Cantaloupe - MARGARET ANNE DUCKSON, Renee Boyer, Joseph Eifert, Joseph Marcy, Sean O'Keefe, Gregory Welbaum, Virginia Tech, Blacksburg, VA, USA
- P2-135 Comparison of Grape Seed, Pomegranate and Cranberry Extracts against *Salmonella enterica* serovar Typhimurium and *Salmonella* Enteritidis - ANTHONY CICCIO, Doris D'Souza, Amy Howell, University of Tennessee-Knoxville, Knoxville, TN, USA
- P2-136 Reduction of *Cronobacter sakazakii* by Blueberry Juice and Blueberry Proanthocyanidins - SNEHAL JOSHI, Amy Howell, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA
- P2-137 *In Vitro* Control of *Enterococcus faecalis* by *Zataria multiflora* Boiss, *Origanum vulgare* L and *Mentha pulegium* Essential Oils - Shirin Moshayedi, Farzaneh Shahraz, Donald Schaffner, RAMIN KHAKSAR, Sh. Beheshti University of Medical Sciences, Cupertino, CA, USA
- P2-138 Efficacy of Pecan Shell Extracted Organic Antimicrobials Inhibiting the Growth of *Listeria* spp. and *Listeria monocytogenes* Strains Adhered on Chicken Skin - Dinesh Babu, PHIL CRANDALL, Casey Johnson, Corliss O'Bryan, Steven Ricke, University of Arkansas, Fayetteville, AR, USA
- P2-139 Inhibitory Effect of Mexican Oregano (*Lippia berlandieri* Schauer) Essential Oil on *Pseudomonas* spp. Biofilm Formation - RAUL AVILA-SOSA, Obdulia Vera-Lopez, Addi Navarro-Cruz, Rosa María Dávila-Márquez, Cynthia Mansilla-Cuervo, Universidad Autónoma de Puebla, Puebla, Mexico
- P2-140 Antimicrobial Efficacy of Cinnamaldahyde, Carvacrol and Citral against *Escherichia coli* O157:H7 on Organic Leafy Greens Held at 4°C - JORDAN DENTON, Divya Jaroni, Sadhana Ravishankar, Oklahoma State University, Stillwater, OK, USA
- P2-141 Determining the Efficacy of Disinfectants against Human Noroviruses among 20 Commercially Available Disinfectants in Korea and Japan - Jihyoung Ha, Jeongsoon Kim, Minkyong Kim, Junhyuk Choi, MYUNG KIM, Kim Laboratories, Inc., Rantoul, IL, USA
- P2-142 Morphological Effects of Pulse Ultraviolet Light and Anolyte Treatment on Bacterial Cell Wall - KATHLEEN RAJKOWSKI, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P2-143 Efficacy of Commercial Citrus-based Disinfectants to Inhibit Growth, Swarming, and Biofilm Formation of *Salmonella* and Decontaminate Parsley - ALAM GARCIA, Nydia Orue, Norma Heredia, Santos Garcia, Universidad Autonoma de Nuevo Leon, San Nicolas, N.L., Mexico
- P2-144 Antimicrobial Efficacy of Novel Low-residue Peracetic Acid-based Sterilant for Use in Vapor Aseptic Applications - ANGELA THOMPSON, Shibu Abraham, John Rovison, FMC Corporation, Tonawanda, NY, USA
- P2-145 Reductions in *Salmonella* and *Campylobacter* on Poultry Parts and Trim Due to Antimicrobial Treatments - DEBORAH KLEIN, Cari K. Lingle, Craig M. Ledbetter, James E. White III, Jeremy Adler, Elaine P. Black, Ecolab Inc., Eagan, MN, USA
- P2-146 The In-plant Performance of Acidified Sodium Chlorite as Affected by Application Parameters - JEREMY ADLER, Craig M. Ledbetter, James E. White III, Deborah Klein, Cari K. Lingle, Elaine P. Black, Ecolab Inc., Eagan, MN, USA, Ecolab Inc., Ault, CO, USA
- P2-147 Delmopinol Hydrochloride Spray Reduces *Salmonella* on Cantaloupe Surfaces - RAUL SAUCEDO, Joseph Eifert, Renee Boyer, Robert Williams, Gregory Welbaum, Virginia Tech, Blacksburg, VA, USA
- P2-148 Efficacy of Delmopinol against *Campylobacter jejuni* on Chicken, Stainless Steel and High-density Polyethylene - CALVIN WALDRON, Joseph Eifert, Robert Williams, Sean O'Keefe, Food Science and Technology, Virginia Tech, Blacksburg, VA, USA
- P2-149 Cetylpyridinium Chloride (CPC) Spray Treatments Reduce *Salmonella* on Cantaloupe Surfaces - RAUL SAUCEDO, Joseph Eifert, Renee Boyer, Robert Williams, Gregory Welbaum, Virginia Tech, Blacksburg, VA, USA
- P2-150 Effectiveness of Chemical Intervention Treatments against *Escherichia coli* O157:H7, Non-O157 STEC, *Listeria monocytogenes*, and *Salmonella* - AMANDA SVOBODA, Aubrey Mendonca, Angela Shaw, Iowa State University, Ames, IA, USA
- P2-151 Efficacy of Sanitizers in Reducing *Salmonella* on Pecan Nutmeats during Cracking and Shelling - DAVID MANN, Larry Beuchat, Walid Alali, University of Georgia, Griffin, GA, USA
- P2-152 Presence of Disinfectant-resistance Genes in *Escherichia coli* Isolated from NARMS Retail Meats - LIKOU ZOU, Shaohua Zhao, Patrick McDermott, Fei Wang, Qianru Yang, Guojie Cao, Jianghong Meng, Sichuan Agricultural University, Dujiangyan, China
- P2-153 Efficacy of Antimicrobial Solutions on Ground Poultry Skin-on Poultry Products - Karen Beers, PEGGY COOK, MCA Services, Rogers, AR, USA
- P2-154 The Mechanism of Antimicrobial Action of Oleanolic Acid on *Listeria monocytogenes*, *Enterococcus faecalis* and *Enterococcus faecium* - YOCHAN YOON, Sejeong Kim, Kyoung-Hee Choi, Sookmyung Women's University, Seoul, South Korea
- P2-155 Antimicrobial Effects of Lauric Arginate against *Campylobacter jejuni* and Spoilage Organisms on Chicken Breast Fillets - DIVEK V.T. NAIR, Chander Shekhar Sharma, Ramakrishna Nannapaneni, Barakat Mahmoud, Mississippi State University, Mississippi State, MS, USA
- P2-156 Effectiveness of Potassium Sorbate on Controlling the Growth of *Listeria monocytogenes* in Meat Salad - CHENG-AN HWANG, Lihan Huang, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P2-157 Sodium Polyphosphate Enhances the Antimicrobial Activities of Whole and Fractionated Peanut Skin Extract against *Zygosaccharomyces bailii* in a Model Juice System - MERIKE SEAMAN, Sean O'Keefe, Paul Sarnoski, Lester Wilson, Byron Brehm-Stecher, Iowa State University, Ames, IA, USA
- P2-158 Antibacterial Effect of Silver Nanoparticles on Intestinal Bacteria - AMI YOO, University of Missouri, Columbia, MO, USA
- P2-159 Viability of *Listeria monocytogenes* on Uncured Turkey Breast Commercially Prepared with and without Buffered Vinegar during Extended Storage at 4°C and 10°C - ANNA PORTO-FETT, Bradley Shoyer, Sarah Wadsworth, Stephen Campano, John Luchansky, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

- P2-160 Adaptation to Extremely High Antibiotic Levels ("Hyper"-resistance) Impacts the Stress Tolerance of *Listeria monocytogenes* and *Salmonella* spp. - STAVROS MANIOS, Ioannis Zois, Giorgos Kamintzis, Antonia Gounadaki, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P2-161 The First Detection of Florfenicol-resistant Gene in Shiga-like Toxin Producing *Escherichia coli* Isolated from Pork in Korea - EUN JEONG HEO, Eun Kyung Ko, Hyunjung Park, Young Jo Kim, Jin San Moon, Soonmin Oh, Quarantine & Inspection Agency, Anyang, South Korea
- P2-162 Drug-resistant and Virulent *Salmonella* Serovars Can Colonize Pre-harvest Poultry Facilities in the Absence of Selective Antimicrobial Pressure - Kelly Johnson, Si Hong Park, Bashar Shaheen, Jing Han, Steven Foley, Joanna Deck, Brett Kenney, Steven Ricke, RAJESH NAYAK, U.S. Food and Drug Administration, Jefferson, AR, USA
- P2-163 Temperature Affects Macrolide Resistance in *Campylobacter* spp. - J. ERIC LINE, Brian Oakley, U.S. Department of Agriculture-ARS, Athens, GA, USA

- P2-164 Control of *Listeria monocytogenes* by Antimicrobial Edible Films on Ham Slices and Microwave Reheating of Frankfurters - ANASTASIA KAPETANAKOU, Dimitrios Karyotis, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P2-165 The Effect of Various Food Preservatives on Growth of *Listeria monocytogenes* Mutants with Altered Growth Phenotype in High Salt and Refrigeration Temperature - LAUREL BURALL, Atin Datta, U.S. Food and Drug Administration-CFSAN, Laurel, MD, USA
- P2-166 Evaluation of Coated Nisin Containing Films Formulated to Inhibit *Listeria monocytogenes* on Vacuum Packaged RTE-Foods for Commercial Converting Purposes - ANGELA RICHARD, Michele Perna, Kay Cooksey, Clemson University, Clemson, SC, USA

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Technical Production

## WEDNESDAY POSTERS 9:00 AM – 3:00 PM

### P3 Applied Laboratory Methods Novel Laboratory Methods Produce Risk Assessment

Charlotte Convention Center, Exhibit Hall

P3-01 through P3-79 – Authors present

9:00 a.m. – 11:00 a.m.

P3-80 and above – Authors present

1:00 p.m. – 3:00 p.m.

#### Applied Laboratory Methods

- P3-01 Developing a Universal Enrichment Broth for the Foodborne Bacterial Pathogen *Salmonella* - KIRSTEN HIRNEISEN, Chong-Ming Cheng, Donna Williams-Hill, U.S. Food and Drug Administration, Irvine, CA,
- P3-02 Comparison of Enrichment Broths for the Recovery of Healthy and Heat-injured *Salmonella* Typhimurium on Duck Wing - QIANWANG ZHENG, Yishan Yang, Hyun-Jung Chung, Hyun-Gyun Yuk, National University of Singapore, Singapore
- P3-03 Surveillance of Shiga Toxin-producing *Escherichia coli* O157:H7 Sampled from the Fresh Produce of the Local Market - JANAK KHATIWADA, Shurrita Davis, Doug Smith, Decima Washington, Leonard Williams, North Carolina A&T State University, Kannapolis, NC, USA
- P3-04 Evaluation of a Rapid Lateral Flow Method for the Detection of *Salmonella* in Food Samples - Christine Aguilhon, Laure Puthod, Jin Shi, Amparo Sanjuan, JEAN-LOUIS PITTET, bioMérieux, Marcy L'Etoile, France
- P3-05 Evaluation of Lateral Flow Devices for Detection of *Escherichia coli* O157:H7 in Raw Milk and Produce - Willis Fedio, RUBEN ZAPATA, Paul Browning, Ken Yoshitomi, Karen Jinneman, Lyssa White, Ruiqing Pamboukian, Steve Weagant, New Mexico State University, Las Cruces, NM, USA
- P3-06 Evaluation of Culture Methods for Shiga Toxin-producing *Escherichia coli* - Gentry Lewis, RODNEY MOXLEY, Matthew Schaich, University of Nebraska-Lincoln, Lincoln, NE, USA
- P3-07 Comparative Evaluation of a New Selective Chromogenic Agar for the Isolation of Non-O157 STEC Serovars in Conjunction with Immunomagnetic Separation and Acid Enrichment - HARI PRAKASH DWIVEDI, Gregory Devulder, Jennifer Bick, bioMérieux, Inc., Hazelwood, MO, USA
- P3-08 Simultaneous Immunomagnetic Separation (IMS) of Five *Escherichia coli* STEC O-groups with Subsequent Differentiation Using Modified Rainbow Agar - ALEXANDRA CALLE, Matthew Sellers, Guy Loneragan, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-09 Prediction of *Escherichia coli* O157 Load Using Immunomagnetic Separation and Regression Analysis - ALEXANDRA CALLE, Mindy Brashears, Guy Loneragan, Texas Tech University, Lubbock, TX, USA
- P3-10 Evaluation of Immunomagnetic Separation Techniques for the Recovery and Re-growth Potential of *Escherichia coli* O157:H7 in Finished Composts from Manure, Biosolids, and Yardwaste Feedstocks - MARY THERESA CALLAHAN, Russell Reynnells, Cheryl Roberts, David Ingram, Patricia Millner, Manan Sharma, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- P3-11 A Complete AOAC-Approved Workflow for the Detection of *Salmonella* spp. in Pooled Food Samples - JASON WALL, Rick Conrad, Life Technologies, Inc., Austin, TX, USA
- P3-12 Evaluation of Commercial Test Kits for Detection of *Salmonella* in Alfalfa Sprout Spent Irrigation Water - TONG-JEN FU, Nicole Maks, Arlette Shazer, Di Xiao, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P3-13 Comparison of Sampling and Processing Methods for Microbiological Analysis of Fecal Indicators in Large Volumes of Field-Sampled Produce - Cindy Caballero, Rafael Garcia, Fabiola Venegas, Luisa Solis, NORMA HEREDIA, Lee-Ann Jaykus, Faith Bartz, Juan Leon, Santos Garcia, Universidad A. de Nuevo Leon, Monterrey, Mexico
- P3-14 Comparative Evaluation of a New TEMPO® Assay for the Next Day Enumeration of the Total Aerobic Mesophilic Flora in a Variety of Food and Environmental Samples - GREGORY DEVULDER, Hari Prakash Dwivedi, Ron Johnson, John Mills, bioMérieux, Inc., Hazelwood, MO, USA
- P3-15 Rapid Quantitative Enumeration of Yeasts and Molds - Sailaja Chandrapati, TERA NORDBY, 3M Food Safety, St. Paul, MN, USA
- P3-16 Evaluation of Inoculation and Carcass Rinse Methods on the Recovery of *Salmonella* Enteritidis and *Campylobacter jejuni* from Broiler Carcasses - JACOB SMITH, Luxin Wang, Christy Bratcher, Sacit Bilgili, Manpreet Singh, Auburn University, Auburn, AL, USA
- P3-17 Comparison of Detection Methods for Non-O157 Shiga Toxin-producing *Escherichia coli* in 375 g Beef Trim - Sarita Raengpradub-Wheeler, Precia Heard, Christophe Dufour, Russell Flowers, WENDY MCMAHON, Silliker, Inc., Crete, IL, USA
- P3-18 Recovery of *Salmonella* Using a 325 Gram Sample and a Reduced Enrichment Broth Ratio - MARK PRATT, TaNaska Trotter, Lisa Jacobsen, Mary Niemann, John Jarosh, Zhihong Wang, L. Victor Cook, U.S. Department of Agriculture-FSIS, Saint Louis, MO, USA
- P3-19 Validation of the VIDAS® UP *Listeria* (LPT) for the Detection of *Listeria* spp. in 125-g Samples in Various Food Matrices - AMIT MOREY, Robert Columbus, Aditya Thakur, Brittany Chumchal, Sergio Montez, Bharath Brahmanda, Ron Johnson, Food Safety Net Services, San Antonio, TX, USA
- P3-20 Comparative Evaluation of the VIDAS® UPL *Listeria* (LPT) for the Detection of *Listeria* spp. in Various Food Matrices - SERGIO MONTEZ, Bharath Brahmanda, Brittany Chumchal, Aditya Thakur, Robert Columbus, Ron Johnson, Amit Morey, Food Safety Net Services, San Antonio, TX, USA
- P3-21 ISO 16140 Extension Study of the a Method for Detection of *Salmonella* in 375 g Raw Beef and Raw Veal Samples - Melinda Maux, Alice Peplinski, Peggy Nomade, JEAN-LOUIS PITTET, bioMérieux, Marcy L'Etoile, France
- P3-22 Validation of the LMX Method for the Detection of *Listeria monocytogenes* in 125-g Food Samples - SERGIO MONTEZ, Bharath Brahmanda, Brittany Chumchal, Aditya Thakur, Robert Columbus, Ron Johnson, Amit Morey, Food Safety Net Services, San Antonio, TX, USA
- P3-23 Chemiluminescence Competitive Assay for the Detection of Aflatoxin B1 in Corn Using an Aptamer Linked with Hemin/G-quadruplex Horseradish Peroxidase-mimicking DNAzyme - WON-BO SHIM, Hyoyoung Mun, Hyo Arm Jung, Duck-Hwa Chung, Min-Gon Kim, Gwangju Institute of Science and Technology, Gwangju, South Korea
- P3-24 Recovery of Foodborne Pathogens from Stainless Steel Coupons When Co-inoculated with a Fluorescent Compound - JESSICA MAITLAND, Renee Boyer, Joseph Eifert, Susan Duncan, Daniel Gallagher, Virginia Tech, Blacksburg, VA, USA

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- P3-25 Cationic Nanocapture for the Concentration of Foodborne Hepatitis A Virus - RUIQIN WU, Rocio Morales-Rayas, Mansel Griffiths, University of Guelph, Guelph, ON, Canada
- P3-26 Performance Evaluation of a New Molecular Technology for the Detection of *Escherichia coli* O157 in Food - ADRIANA TASSINARI, Katia Souza, John David, Maria Teresa Destro, 3M Do Brasil Ltda, Jundiai, Brazil
- P3-27 Detection of *Cronobacter sakazakii* in Milk Powder Using Loop-mediated Isothermal Amplification - Young-Ju Kim, Sheungwoo Seo, MIN HWA LEE, Dong Joo Seo, Xiaoyu Wang, Na Ry Son, Changsun Choi, Chung-Ang University, Ansung-Si, Gyeonggi, South Korea
- P3-28 Evaluation of a Suite of Loop-mediated Isothermal Amplification Assays for the Rapid, Reliable, and Robust Detection of Shiga Toxin-producing *Escherichia coli* in Produce - FEI WANG, Qianru Yang, Kelly Jones, Jianghong Meng, Beilei Ge, University of Maryland, College Park, MD, USA
- P3-29 Rapid Detection of *Escherichia coli* O157:H7, Non-O157 STEC and *Salmonella*, in Contaminated Meat Using LAMP MP Molecular Test and Lateral Flow Assay - CHANDRA BAPANALLY, Gayatri Maganty, Akif Kasra, SA Scientific, Ltd., San Antonio, TX, USA
- P3-30 Validation of Test for Detection of *Salmonella* spp. in a Variety of Foods - Oscar Caballero, Susan Alles, R. Lucas Gray, Jerry Tolan, MARK MOZOLA, Jennifer Rice, Patrick Bird, Kiel Fisher, Jonathon Flannery, Erin Crowley, Neogen Corporation, Lansing, MI, USA
- P3-31 Evaluation of Loop-mediated Isothermal Amplification for the Rapid, Reliable, and Robust Detection of *Salmonella* in Produce - QIANRU YANG, Fei Wang, Kelly Johns, Jianghong Meng, Witoon Prinyawiwatkul, Beilei Ge, Louisiana State University, Baton Rouge, LA, USA
- P3-32 Development of an Assay to Detect *Salmonella enterica* Serovar Senftenberg by qPCR - MICHAEL KARBERG, Angela Burrell, Adam Allred, Nathan Dyer, Gilbert Ortiz, Daniel Kephart, Life Technologies, Austin, TX, USA
- P3-33 Validation of a New Real-time PCR Assay for Detection of *Listeria monocytogenes* from Foods and Environmental Surfaces - JONATHAN CLOKE, Carlos G. Leon-Velarde, Nathan Larson, Keron Dave, Katharine Evans, David Crabtree, Annette Hughes, Craig Hopper, Helen Simpson, Sophie Withey, Milena Oleksiuk, Thermo Fisher Scientific, Basingstoke, United Kingdom
- P3-34 Real-time PCR Confirmed MPN Enumeration of *Listeria monocytogenes* from Inoculated Food Matrices Containing *Listeria innocua* - Ashley Keys, Anthony Hitchins, RONALD SMILEY, U.S. Food and Drug Administration-ORA, Jefferson, AR, USA
- P3-35 Comparison of Four DNA Extraction Methods in the Real-time PCR Assay for Detection of *Listeria monocytogenes* from Milk Products - EUN JEONG HEO, Eun Kyung Ko, Hyunjung Park, Young Jo Kim, Jin San Moon, Soonmin Oh, Animal, Plant and Fisheries Quarantine and Inspection Agency, Anyang, South Korea
- P3-36 Simultaneous Detection of *Salmonella* spp., *Escherichia coli* O157 and *Listeria monocytogenes* in a Variety of Cheeses and Spinach Using a Multiplex Real-time PCR Method - VENUGOPAL SATHYAMOORTHY, Atin Datta, Larisa Trach, Yiping He, Ben Tall, Barbara McCardell, U.S. Food and Drug Administration-CFSAN-DVA, Laurel, MD, USA
- P3-37 An Independent Laboratory Evaluation of a *Salmonella* spp. Detection Kit - ERIN CROWLEY, Patrick Bird, Kiel Fisher, M. Joseph Benzinger, Megan Boyle, James Agin, Dave Goins, Marcia Armstrong, Corinna Kueppers, Sarah Fakh, Sandra Luley, Holger Engel, Q Laboratories, Inc., Cincinnati, OH, USA
- P3-38 Validation of a Commercial Real-time PCR Test Kit for Screening *Salmonella* in Produce, Meats, Seafood, Dairy, Spices, Infant Formula, Pet Food and Environmental Surfaces - MORGAN WALLACE, Bridget Andalaro, Stephen Varkey, Daniel DeMarco, Dawn Fallon, Nisha Corrigan, Andrew Farnum, Monica Tadler, Steven Hoelzer, Julie Weller, George Tice, Patrick Bird, Erin Crowley, DuPont, Wilmington, DE, USA
- P3-39 Pulsed-field Gel Electrophoresis Subtyping of *Salmonella* Isolates from Carcasses, Lymph Nodes, and Fecal Samples from Cattle at Slaughter Facilities in Mexico - Diana Ayala, Mindy Brashears, Kendra Nightingale, Mark Miller, Claudia Narvaez Bravo, J. Chance Brooks, ALEX BRANDT, Texas Tech University, Lubbock, TX, USA
- P3-40 Independent Evaluation of a Commercial STEC Method for the Detection of Shiga Toxin-producing *Escherichia coli* in Ground Beef and Beef Trim - LESLIE K. THOMPSON, Michelle Montgomery, AEGIS FOOD TESTING Laboratories, North Sioux City, SD, USA
- P3-41 Using a Repetitive Sequence-based PCR System for Molecular Characterization of Shiga Toxin-producing *Escherichia coli* - KIMBERLY ANDERSON, Shaohua Zhao, Eileen Liu, Sunee Himathongkham, U.S. Food and Drug Administration, Alameda, CA, USA
- P3-42 Optimization of Multiplex Real-time PCR Assay for Detection and Quantification of *Vibrio* spp. and Total Bacteria - JIYEUN KIM, Jung-Lim Lee, Delaware State University, Dover, DE, USA
- P3-43 FERN Multi-laboratory Validation of the BAX qPCR *Vibrio* Assay for Identification of *Vibrio* Isolates - RUIQING PAMBOUKIAN, Willis Fedio, Jessica Jones, Paul Browning, John Bowers, FERN Laboratory Cadre, Angelo DePaola, U.S. Food and Drug Administration, Rockville, MD, USA
- P3-44 The Step-by-Step RT-quality Assurance Procedure for Reverse Transcription Quantitative PCR: Illustration with the *Bacillus weihenstephanensis* Acid-resistance Biomarkers - Noemie Desriac, FLORENCE POSTOLLEC, Louis Coroller, Daniele Sohier, ADRIA Development, Quimper, France
- P3-45 Rapid Detection of *Clostridium difficile* by Using Whole Genome Amplification and Real-time PCR - Hye-Jin Jang, SU-JEONG HA, Nam-Hyouck Lee, Se-Wook Oh, Korea Food Research Institute, Seoul, South Korea
- P3-46 Evaluation of the Atlas® *Salmonella* G2 Detection System for Foods and Environmental Surfaces - ANJA BUBECK-BARRETT, Kristin Livezey, Joe Garcia, Bernadine Luong, William Kwong, Steve Vaughn, Kevin Tsao, Celina Puente, Brett Maroni, Michael Becker, Wendy McMahon, Brian Kupski, Michele Wisniewski, Roka Bioscience, San Diego, CA, USA
- P3-47 Evaluation of the New Atlas® *Escherichia coli* O157:H7 Detection Assay for High Fat Ground Beef and Beef Trim Samples - BETTINA GROSCHEL, Kristin Livezey, Hua Yang, Michele Wisniewski, Greg Merrick, Edgar Kamantigue, Michael Reshatoff, Michael Becker, Roka Bioscience, San Diego, CA, USA
- P3-48 Evaluation of the Atlas® STEC Detection Assay for Fresh Raw Ground Beef and Fresh Raw Beef Trim - KRISTIN LIVEZEY, Hua Yang, Kathryn Baker, Brett Maroni, Kevin Tsao, Apolonia Huerta, Bettina Groschel, Greg Merrick, Jeff Panganiban, Edgar Kamantigue, Chad Fleischer, Jarrod Morgan, Michael Reshatoff, Michele Wisniewski, Michael Becker, Roka Bioscience, San Diego, CA, USA
- P3-49 Evaluation of Environmental Samples from a Food Plant with the Atlas® *Listeria* Detection Assay Utilizing a Single 90 ml Enrichment Step - SHANNON KAPLAN, Brett Weaver, Maesa Hanhan, Brett Maroni, Ernie Hsu, Michael Becker, Roka Bioscience, San Diego, CA, USA

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- P3-50 Enrichment Media Comparison for Testing Whey Protein Powder Using the Atlas® *Salmonella* Detection Assay - TOM BRIGGS, Tanushree Shah, Joseph Kibala, Roka Bioscience, Warren, NJ, USA
- P3-51 Performance of the Atlas® *Listeria monocytogenes* Detection Assay (LmG2) after a Single Enrichment - VANESSA BRES, Polina Zaslavsky, Maesa Hanhan, Paul Campbell, Nathan Noll, Ernie Hsu, Hua Yang, Joe Garcia, Michael Reshatoff, Michael Becker, Roka Bioscience, San Diego, CA, USA
- P3-52 Rapid Detection of Pseudomonads in Dairy Products and Process Water - ROGER BRIDEAU, Ruth Eden, BioLumix, Ann Arbor, MI, USA
- P3-53 Comparison of Foodproof Real-time PCR Kits to the ISO Method for STEC Screening and O-group Identification - CHRISTINA HARZMAN, Astrid Grönwald, Cordt Grönwald, Kornelia Berghof-Jäger, BIOTECON Diagnostics, Potsdam, Germany

## Novel Laboratory Methods

- P3-54 Capture and Detection of a Representative Human Norovirus Strain Using Target-specific Nucleic Acid Aptamers: Proof of Concept - SOO HWAN SUH, Blanca Escudero-Abarca, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P3-55 Using the ApoH Protein to Capture and Concentrate Human Norovirus Particles and Virus-like Particles from Various Matrices - REBECCA M. GOULTER, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P3-56 **Development of a Human Norovirus Indicator Using *Enterococcus* sp. 16S rRNA and *Bacteroides fragilis* gyrB Gene as a Rapid Detection (Monitoring) Tool in Various Environments** - JIA WEI YEAP, Jiyoung Lee, Richard Linton, Jianrong Li, The Ohio State University, Columbus, OH, USA
- P3-57 WITHDRAWN
- P3-58 Multiplex PCR for Detection of *Vibrio* spp. and 5 Pathogenic *Vibrio* Species Using Primers Designed by Comparative Genomics - SHIN-YOUNG LEE, Jio Ryu, Hyun Joong Kim, Hae-Yeong Kim, Kyung Hee University, Yongin, South Korea
- P3-59 Multiplex PCR Assays for Simultaneous Detection of Genetically Modified Organisms (GMO) from Crops and Processed Food - YOUNGSIL HA, Cesar Nadala, Mansour Samadpour, IEH Laboratories and Consulting Group, Lake Forest Park, WA, USA
- P3-60 Universal Multiplex PCR for Detection of *Escherichia coli* O157:H7 and *Salmonella* spp. in Food Samples - SUKKYUN HAN, Cesar Nadala, Mansour Samadpour, IEH Laboratories and Consulting Group, Lake Forest Park, WA, USA
- P3-61 Development of an Automated Multiplexed Immunomagnetic Separation System for Isolating Shiga Toxin-producing *Escherichia coli* - Laurie Clotilde, Nicole Herbold, ANDREW LIN, Clay Bernard, Alexandra Salvador, Carol Lauzon, Mark Muldoon, Yichun Xu, John Mark Carter, U.S. Food and Drug Administration, Alameda, CA, USA
- P3-62 WITHDRAWN
- P3-63 Development of Loop-mediated Isothermal Amplification for the Rapid Detection of *Arcobacter* Species in Chicken - XIAOYU WANG, Min Hwa Lee, Dong Joo Seo, Sheungwoo Seo, Na Ry Son, Changsun Choi, Chung-Ang University, Ansong-Si, Gyounggi, South Korea
- P3-64 Novel Agglutination Assays Using Phage Ligand Proteins to Identify the Top 7 Shiga Toxin-producing *Escherichia coli* (STEC) Serogroups - MARION BOUVIER-CROZIER, Sonja Molinaro, Jean-Louis Pittet, Delphine Thevenot-Sergentet, VetAgro-Sup, Marcy l'Etoile, France
- P3-65 WITHDRAWN
- P3-66 Quantitative Validation of Two Novel Selective Media for the Enumeration of *Bacillus cereus* in Fermentation Sauce Samples - DONG-HYEON KIM, Jung-Whan Chon, Dae-Geun Hwang, Hong-Seok Kim, Kwang-Young Song, Kun-Ho Seo, Konkuk University, Seoul, South Korea
- P3-67 Molecular Serotyping and Sub-typing of *Salmonella* Strains by Genome Sequence Scanning - MOHAN MANOJ KUMAR, Mikhail Safranovitch, Katarzyna Crissy, Amy Erickson, Maura Faggart, Shavana Ohneswere, Jimmy Symonds, Shilpi Vyas, Rudolf Gilmanshin, Pathogenetix, Woburn, MA, USA
- P3-68 The Smart DNA-based Chemiluminescence Resonance Energy Transfer (CRET) for the Detection of Ochratoxin A in Coffee - HYOYOUNG MUN, Eunjung Jo, Hyo Arm Joung, Donggu Hong, Taihwa Li, Won-Bo Shim, Min-Gon Kim, Gwangju Institute of Science and Technology, Gwangju, South Korea
- P3-69 Rapid Sakazakii to Detect *Cronobacter* spp. in Infant Formula: Certification According to the ISO16140 Standard - Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Sarah Peron, Maryse Rannou, DANIELE SOHIER, ADRIA, Quimper, France
- P3-70 Development of a New Device for the Rapid Detection of *Alicyclobacillus* - SUSAN MCDOUGAL, Carolyn Montei, Ronald Sarver, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA
- P3-71 Soleris® Direct Yeast and Mold as an Alternative to Dilution Plating for Determination of Yeast and Mold Levels in Foods - Marcelle Pereault, OSCAR CABALLERO, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA
- P3-72 Development and Evaluation of New PNA Probes for Whole Cell Detection of *Candida albicans* - HYUN JOONG KIM, Byron Brehm-Stecher, Iowa State University, Ames, IA, USA
- P3-73 Rapid Detection of *Listeria* spp. from Environmental Samples Using a New Immunomagnetic Assay - David Claveau, Sergiy Olishevskyy, Lila Maduro, Michael Giuffre, GABRIELA MARTINEZ, Maxivet Inc., St-Hyacinthe, QC, Canada
- P3-74 Application of VITEK® MS System for the Identification of Pathogens from the Isolated Colonies on Chromogenic Media from a Variety of Food Samples - HARI PRAKASH DWIVEDI, David Pincus, Gregory Devulder, bioMérieux, Inc., Hazelwood, MO, USA
- P3-75 *In silico* Adaptation of EDNA (E-probe Diagnostic Nucleic Acid Analysis) for Detection of Foodborne Pathogens - TRENNA BLAGDEN, William Schneider, Ulrich Melcher, Jacqueline Fletcher, Oklahoma State University, Stillwater, OK, USA
- P3-76 Evaluation of 3M™ Tecra™ *Staphylococcus aureus* Visual Immunoassay for the Detection of *Staphylococcus aureus* in Selected Foods - MATTHEW P. TURNER, Sanaz Khalili, 3M Asia Pacific, Singapore, Singapore

- P3-77 Performance of the 3M™ Molecular Detection Assay *Listeria* as Compared to the Canadian Reference Method MFHPB-30 - CHRISTIAN BLYTH, 3M Canada Corporation, London, ON, Canada
- P3-78 Evaluation of the Aerobic Procedure for the Recovery of Lactic Acid Bacteria with 3M™ Petrifilm Plates™ in Ready-to-Eat Meat Products - GUADALUPE MONDRAGON, Pedro Duran, Olga Velazquez, Teresa Alvarez, 3M Food Safety, Mexico City, Mexico
- P3-79 A High Throughput Method for the Detection of STEC Top7 in Meat Samples - SYLVIE HALLIER-SOULIER, Sirine Assaf, Valerie van Wilder, Sarah Jemmal, Sebastien Bouton, Pall GeneDisc Technologies, Bruz, France

## Produce

- P3-80 Survival of *Salmonella*, *Escherichia coli* O157:H7 and *Listeria monocytogenes* on Pecans and Peanuts and Characterization of *Salmonella* Isolates - PARDEEPINDER BRAR, Lisseth Proano, Loretta Friedrich, Linda Harris, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P3-81 Survival of *Salmonella*, *Escherichia coli* O157:H7 and *Listeria monocytogenes* on Inoculated Inshell Chandler Variety Walnuts - JOHN FRELKA, Linda Harris, University of California-Davis, Davis, CA, USA
- P3-82 The Effect of Initial Almond Water Activity on Thermal Inactivation of *Enterococcus faecium* during Dry Heating - PICHAMON LIMCHAROENCHAT, Bradley Marks, Sanghyup Jeong, Michigan State University, East Lansing, MI, USA
- P3-83 Fate of *Salmonella* in Soil, Water and Quartz Particle Biofilms GOVINDARAJ DEV KUMAR, Robert Williams, Hamzeh Alqublan, Nammalwar Sriranganathan, Renee Boyer, Joseph Eifert, University of Arizona, Tucson, AZ, USA
- P3-84 Can *Salmonella* spp., *Listeria monocytogenes*, and *Escherichia coli* O157:H7 Survive on Fresh Produce Cardboard Boxes? - SUJATA SIRSAT, Jack Neal, University of Houston, Houston, TX, USA
- P3-85 Survival of *Salmonella enterica* Newport in *Ralstonia solanacearum* - Infected Tomato - STEPHANIE POLLARD, Virginia Tech, Blacksburg, VA, USA
- P3-86 Factors That Influence Survival of *Escherichia coli* O157:H7 in Field-Inoculated Lettuce - ANNE-LAURE MOYNE, Steven T. Koike, Michael D. Cahn, Linda Harris, University of California-Davis, Davis, CA, USA
- P3-87 Survival of *Escherichia coli* O157:H7 87:23 on Arugula, Kale, Lettuce and Mizuna Microgreens, and Comparison of Leaf Surface Morphology for Mature Greens and Microgreens - HEE KYUNG PARK, Mosbah Kushad, Hao Feng, University of Illinois at Urbana-Champaign, Urbana, IL, USA
- P3-88 Survival of Six Shiga-toxigenic *Escherichia coli* Serotypes in Field Lettuce - PASCAL DELAQUIS, Susan Bach, Greg Bezanson, Robin McKellar, Ed Topp, Agriculture and Agri-Food Canada, Summerland, BC, Canada
- P3-89 Comparative Survival of *Escherichia coli* O157:H7, *Salmonella* Typhimurium, and Murine Norovirus on Spinach Plants - SEAN FERGUSON, Cheryl Roberts, Eric Handy, Qing Wang, Sarah Markland, Jeri Barak, Kalmia Kniel, Manan Sharma, University of Maryland, College Park, MD, USA
- P3-90 Transfer and Persistence of *Salmonella enterica* on Hydroponic Living Lettuce Roots and Edible Tissue Stored at 4°C and 12°C - Jessie Waitt, MONICA PONDER, Daniel Taylor, David Kuhn, Gregory Welbaum, Virginia Tech, Blacksburg, VA, USA
- P3-91 The Impact of Inoculation Time of Day on the Survival of Attenuated *Escherichia coli* O157:H7 and Generic *Escherichia coli* on Field-grown Cilantro - TYANN BLESSINGTON, Anne-laure Moyne, Irene Zhao, Linda Harris, Oak Ridge Institute for Science and Education Postgraduate Fellow, Davis, CA, USA
- P3-92 Effects of Packaging Atmosphere and Size on the Growth of *Listeria monocytogenes* on Fresh-cut Celery Sticks during Refrigerated Storage - CHELSEA KAMINSKI, Natalie Page, Eva Almenar, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-93 Survival of *Salmonella* spp. on Dried Fruit Held at Varying Temperatures - NANCY BONTEMPO, Aaron Uesugi, Mondelez International, East Hanover, NJ, USA
- P3-94 Fate of *Escherichia coli* O157:H7 and *Salmonella* spp. on Bruised and Unblemished Blueberries Harvested at Two Maturity Stages - LORETTA FRIEDRICH, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P3-95 The Influence of Ripeness and Bruising on the Survival of *Escherichia coli* O157:H7 and *Salmonella* on the Surface of Pears - Eliane Rocha, Irene Zhao, VANESSA LIEBERMAN, Linda Harris, University of California-Davis, Davis, CA, USA
- P3-96 Behavior of Inoculated *Salmonella* and *Escherichia coli* O157:H7 on Onion (*Allium cepa*) Skins and in Chopped Onion Flesh - VANESSA LIEBERMAN, Irene Zhao, Michelle Danyluk, Donald Schaffner, Linda Harris, University of California-Davis, Davis, CA, USA
- P3-97 Survival of *Salmonella* spp. and *Pectobacterium carotovorum* on Brush Roller Treated Tomatoes - ALINA BALAGUERO, Keith Schneider, University of Florida, Gainesville, FL, USA
- P3-98 Transfer of *Listeria monocytogenes* during Mechanical Slicing of Onions - ANDREW SCOLLON, Haiqiang Wang, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-99 Extent of *Listeria monocytogenes* Transfer during Cutting of Cantaloupe and Honeydew Melon - ROCKY PATIL, Jake Thorns, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-100 Dissemination of *Escherichia coli* O157:H7 from a Contaminated Shredder or Conveyor Belt to Fresh-cut Iceberg Lettuce during Simulated Commercial Production - LIN REN, Guiomar Denisse Posada-Izquierdo, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-101 A Dimensional Analysis Approach to Modeling Bacterial Pathogen Transfer during Conveying, Washing, and Slicing of Fresh-cut Produce - BEATRIZ MAZÓN, Bradley Marks, Michigan State University, East Lansing, MI, USA
- P3-102 Physicochemical Parameters as Predictors of Sanitizer Efficacy against *Escherichia coli* O157:H7 in Leafy Green Wash Water Containing Sanitizers and Organic Load - GORDON DAVIDSON, Chelsea Kaminski, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-103 Assessing the Microbiological and Physicochemical Characteristics of Processing Water and Their Impact on Safety of Ready-to-Eat Vegetables - DANIELE MAFFEI, Anderson Sant'Ana, Ana Carolina Perez, Fabiana Silva, Bernadette Franco, University of São Paulo, São Paulo, Brazil
- P3-104 The Impact of Organic Load on the Minimal Level of Chlorine Needed to Prevent *Escherichia coli* O157:H7 Cross-contamination during Washing of Fresh-cut Lettuce - CHAO ZHOU, Jianfeng Wang, Mingxia Zang, David Laird, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P3-105 Investigation on the Spread of *Salmonella* and Factors Affecting the Efficacy of Sanitizer during Postharvest Washing of Lettuce - MINGXIA ZANG, Yu Tian, David Laird, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P3-106 Validation of Washing Treatments to Reduce Pathogens in Fresh Produce - KEYLA LOPEZ, Kelly Getty, Kansas State University, Manhattan, KS, USA
- P3-107 Efficacy of Lactic Acid Wash and Advanced Oxidation Technology for Controlling *Escherichia coli* O157:H7 in Bagged Baby Spinach - KRISTA MCKAY, Kelly Getty, James Marsden, Kansas State University, Manhattan, KS, USA

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- P3-109 Practices in Brazilian Ready-to-Eat Vegetable Processing Plants Regarding Water Usage - DANIELE MAFFEI, Anderson Sant'Ana, Bernadette Franco, University of São Paulo, São Paulo, Brazil
- P3-110 Minimizing *Salmonella* Contamination in Sprouts by Controlling the Irrigation Conditions during Germination - JING XIE, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P3-111 Efficacy of Chlorine and Peroxyacetic Acid on Reduction of *Escherichia coli* O157:H7, *Listeria monocytogenes*, *Salmonella* spp., and Natural Microflora on Mung Bean Sprouts - Shan Yu Neo, Gek Hoon Khoo, Pei Yan Lim, Li Kai Phua, Su-Jung Kim, Seung-Cheol Lee, HYUN-GYUN YUK, National University of Singapore, Singapore
- P3-112 Laboratory and Industrial-scale Examination of Post-harvest Peroxyacetic Acid Antimicrobial Application for Whole, Fresh Gala Apples - Karen Killinger, MOLLY MAYER, Richard Dougherty, Ines Hanrahan, Elizabeth O'Daffer, Kim Thayer, Washington State University, Pullman, WA, USA
- P3-113 Inactivation and Survival of *Escherichia coli* O157:H7 and *Salmonella* spp. on Apricot Fruit following UV-C Ultraviolet Light Exposure - Juan Yun, Ruixiang Yan, Joshua Gurtler, XUETONG FAN, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P3-114 Inactivation of *Escherichia coli* O157:H7 and *Salmonella* on Fresh Blueberries Using Pulsed Light Technology - YAOXIN HUANG, Haiqiang Chen, University of Delaware, Newark, DE, USA
- P3-115 Inactivation of *Salmonella* on Cantaloupes and Green Onions Using Pulsed Light (PL) and PL-Surfactant or Sanitizer Combination - WENQING XU, Changqing Wu, University of Delaware, Newark, DE, USA
- P3-116 Hot Water Surface Pasteurization for Inactivating *Salmonella* on Surfaces of Mature Green Tomatoes - BASSAM ANNOUS, Angela Burke, Joseph Sites, U.S. Department of Agriculture-ARS- ERRC, Wyndmoor, PA, USA
- P3-117 Electron Beam Processing of Fresh Fruit for Neutropenic Diets - BIANCA SMITH, Suresh Pillai, Katherine McElhany, Bhimu Patil, Ram Uckoo, Rosemary Walzem, Christine Alvarado, Texas A&M University, College Station, TX, USA
- P3-118 Antimicrobial Activity of Cinnamon, Oregano and Lemongrass Essential Oils against *Escherichia coli* O157:H7 on Organic Leafy Greens Stored at Refrigeration Temperatures - JORDAN DENTON, Divya Jaroni, Buddhini Jayasundera, Sadhana Ravishankar, Mendel Friedman, Oklahoma State University, Stillwater, OK, USA
- P3-119 The Antimicrobial Effect of Glucosinolates Hydrolysis Compounds on *Escherichia coli* O157:H7 into Field Soil - JITU PATEL, Dumitru Macarisin, Nadine Yossa, Paroo Chauhan, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- P3-120 Utilization of Plant Growth Promoting Rhizobacteria to Inhibit Growth of Foodborne Pathogens on Plants - SARAH MARKLAND, Harsh Bais, Kalmia Kniel, University of Delaware, Wilmington, DE, USA, University of Delaware, Newark, DE, USA
- P3-121 Isolation and Effectiveness of Antagonistic *Serratia plymuthica* ED1 against *Salmonella* Enteritidis Growth on Mung Bean Sprouts - KYLE LANDRY, Ejovwoke Dosunmu, Lynn McLandsborough, University of Massachusetts-Amherst, Amherst, MA, USA
- P3-122 Identification of Epiphytic Bacterial Microbes Antagonistic to Enteric Bacterial Pathogens Recovered from Cantaloupe Rind Surfaces - KEILA PEREZ, Mustafa Akbulut, Luis Cisneros-Zevallos, Matthew Taylor, Alejandro Castillo, Texas A&M University, College Station, TX, USA
- P3-123 Reduction of *Salmonella* on Cucumbers by Washing in Thyme Oil and Thymol as Compared with Vinegar and Baking Soda - AGNES KILONZO-NTHENGE, Deborah Long, Tennessee State University, Nashville, TN, USA
- P3-124 Survival of *Salmonella* in Surface Waters Over Six Months - RACHEL MCEGAN, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P3-125 Evaluation of Foodborne Pathogens in Aquatic Wildlife and Irrigation Ponds in Southeastern Georgia - PEIMAN AMINABADI, Lora Smith, Mary Paige Adams, George Vellidis, Debbie Coker, Yingjia Bengson, Edward Atwill, Michele Jay-Russell, University of California-Davis, Davis, CA, USA
- P3-126 The Effects of Contaminated Irrigation Water on Bacterial Persistence and Transmission of Coliforms on Tomatoes - PATRICK SPANNINGER, Krystal Shortlidge, Angela Marie Ferelli, Rachel Brown, Sarah Markland, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P3-127 Examination of Compost and Irrigation Water as On-farm Bacterial Reservoirs and Potential Contamination Routes for In-field Leafy Greens - JAYDE WOOD, Elsie Friesen, Pascal Delaquis, Kevin Allen, University of British Columbia, Vancouver, BC, Canada
- P3-128 Comparative Transmission from Contaminated Irrigation Water on Field-grown Spinach and Lettuce - RACHEL BROWN, Patrick Spanninger, Krystal Shortlidge, Angela Marie Ferelli, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P3-129 Irrigation Water as a Source of Antibiotic Resistant and Virulent *Escherichia coli* on Lettuce - ELNA BUYS, Matthew Aijuka, University of Pretoria, Pretoria, South Africa
- P3-130 *Salmonella* Survival in Florida Tomato Field Soil under Different Simulated Environmental Conditions - ANGELA M. VALADEZ, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P3-131 Persistence of *Escherichia coli* in Manure-amended Soil in Pennsylvania - WILBERT LONG, June deGraft-Hanson, Natalia Macarisin, David Clark, Alyssa Collins, Corrie Cotton, Fawzy Hashem, Manan Sharma, Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P3-132 Effect of Proximity to a Cattle Feedlot on the Occurrence of *Escherichia coli* O157:H7-Positive Pest Flies in a Leafy Green Crop - ELAINE BERRY, James Wells, Lisa Durso, James Bono, Kristina Friesen, Bryan Woodbury, Trevor Suslow, Gabriela Lopez-Velasco, Patricia Millner, U.S. Department of Agriculture-ARS, Clay Center, NE, USA
- P3-133 Simulation of Wildlife Fecal Contamination of Romaine Lettuce by Indicator *Escherichia coli* - SAHARUETAI JEAMSRIPONG, Michele Jay- Russell, Jennifer Carabez, Edward Atwill, Anne-laure Moyne, Alexis Fisher, Melinda Faubel, Ronald Bond, Melissa Partyka, Linda Harris, David Oryang, University of California-Davis, Davis, CA, USA

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- P3-134 Determine the Transfer Coefficient of *Salmonella* between Green Tomatoes and Cotton Cloth Used for Debris Removal in a Laboratory Model System - ASWATHY SREEDHARAN, Michelle Danyluk, Keith Schneider, University of Florida, Gainesville, FL, USA
- P3-135 Microbiological Assessment and Testing of Organic Pre- and Post-harvest Fresh Produce and Irrigation Water on Maryland Farms for *Salmonella*, *Listeria monocytogenes* and Shiga Toxin-producing *Escherichia coli* - AIXIA XU, Donna Pahl, Robert Buchanan, Shirley Micallef, University of Maryland, College Park, MD, USA
- P3-136 Differential Quantification of Microorganisms on Skin or Rind and Stem Scar of Tomatoes and Cantaloupes Harvested Over Two Seasons in South Texas - SONGSIRIN RUENGVEESH, Mariana Villarreal, Juan Anciso, Luis Cisneros-Zevallos, Elsa Murano, Alejandro Castillo, Matthew Taylor, Texas A&M University, College Station, TX, USA
- P3-137 Incidence and Persistence of *Salmonella* and *Escherichia coli* in Environmental Samples from North Carolina Tomato Production Systems - DIANE DUCHARME, Christopher Gunter, Lee-Ann Jaykus, Penelope Perkins-Weazie, Otto Simmons, Eric Brown, Jie Zheng, Erik Burrows, Charles Wang, Gabriela Caroline Arce, Tim Muruvanda, Rebecca Bell, North Carolina State University, Kannapolis, NC, USA
- P3-138 A Microbiological Survey of Small- and Medium-sized Tomato Farms in Maryland, Delaware and New Jersey - SIVARANJANI PAGADALA, Sasha Marine, Shirley Micallef, Fei Wang, Ruth Oni, Meredith Melendez, Wesley Kline, Donna Pahl, Christopher Walsh, Kathryn Everts, Robert Buchanan, University of Maryland, College Park, MD, USA
- P3-139 Uneven Distribution of Microorganisms on the Surface of Field-grown Cantaloupes - SHEFALI DOBHAL, Guodong Zhang, Dhiraj Gautam, Chris Timmons, Li Ma, Oklahoma State University, Stillwater, OK, USA
- P3-140 Microbiological Assessment of Conventionally and Organically Grown Leafy Greens in the Mid-Atlantic Region - SHIRLEY MICALLEF, Sasha Marine, Sivaranjani Pagadala, Fei Wang, Ruth Oni, Meredith Melendez, Wesley Kline, Donna Pahl, Christopher Walsh, Kathryn Everts, Robert Buchanan, University of Maryland, College Park, MD, USA
- P3-141 WITHDRAWN
- P3-142 Baseline of *Salmonella* Prevalence in Retail Beef and Produce from Honduras and Mexico - MARTHA MARADIAGA, Markus F. Miller, Leslie D. Thompson, Alejandro Echeverry, Lyda G. Garcia, Mindy Brashears, Sara Gragg, Alexandra Calle, Ansen Pond, Shanna Ward, Texas Tech University, Lubbock, TX, USA
- P3-143 WITHDRAWN
- P3-144 Prevalence and Characterization of Isolated *Escherichia coli* from Organic and Conventional Produce Commercialized in Bogota, Colombia - Andrea Del Pilar Borbon, Laura Patricia Martinez, ANGIE KATHERINE MOLINA, Maria Vanegas, Universidad de los Andes, Bogota, Colombia
- P3-145 Microbial Contamination of Fresh Vegetables from Directly Farms and Preprocessed Vegetables from Retail Markets - LEE JI HYE, Choi Jae Hyun, Yun Hye Jeong, Seo Gyeong Ho, Song Jeong Geun, Han Sang Guk, National Agricultural Products Quality Management Service Gyeonggi Provincial Office, Anyang-Si, South Korea
- P3-146 The Role of Thin Aggregative Fimbriae and Cellulose Production in the Biofilm Formation of *Salmonella* Typhimurium on the Tomato Surface - MARIANNE FATICA, Max Teplitski, Keith Schneider, University of Florida, Gainesville, FL, USA
- P3-147 Role of Extra-cellular Cellulose Production on the Survival of Shiga Toxin-producing *Escherichia coli* on Lettuce and Spinach after Chlorine Treatment - CHI-CHING LEE, Jinru Chen, Joseph Frank, University of Georgia, Athens, GA, USA
- P3-148 Prevalence and Genetic Relatedness of *Escherichia coli* O157 and *Salmonella* spp. Isolated from an Organic Farming Environment - ACHYUT ADHIKARI, Karen Killinger, Craig Cogger, Andy Bary, Caleb James, Gulhan Unlu, Washington State University, Pullman, WA, USA
- P3-149 Host-Specific Insertion Sequences within 16S rDNA of Intestinal Bacteria as Genetic Markers for Tracking Sources of Fecal Contamination in Produce - ZHENYU SHEN, Chao Zhang, Guolu Zheng, Azlin Mustapha, Mengshi Lin, Dong Xu, University of Missouri, Columbia, MO, USA
- P3-150 Melon-associated Outbreaks of Foodborne Disease in the United States, 1973–2011 - KELLY A. WALSH, L. Hannah Gould, Sarah Bennett, Centers for Disease Control & Prevention, Atlanta, GA, USA
- P3-152 Consumer Cantaloupe Preparation Strategies for Reduced Contamination Risk of Edible Tissue - ADRIENNE SHEARER, Angela Marie Ferelli, Krystal Shortlidge, Rachel Brown, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P3-153 Comparison of RNA Extraction Kits for the Detection of MS2 Phage on Green Onions via RT-PCR - RUOYANG XU, Y. Carol Shieh, Diana Stewart, Illinois Institute of Technology, Chicago, IL, USA
- P3-154 Rapid Real-time PCR Method for Detection of Enterohemorrhagic *Escherichia coli* (EHEC) in Raw Romaine Lettuce - JOSEPHINE GREVE, Mark Zietlow, Kevin Miller, Jay Ellingson, Kwik Trip, Inc./University of Wisconsin-La Crosse, La Crosse, WI, USA
- P3-155 Development of Whey Protein-based Carbon Dioxide Indicator to Monitor Food Freshness - KYUHO LEE, Keehyuk Sohn, Sanghoon Ko, Sejong University, Seoul, South Korea
- P3-156 Development of a Multiplex PCR Assay for *Salmonella*, *Shigella*, *Listeria monocytogenes* and Verocytotoxigenic *Escherichia coli* Detection from Fresh Produce - Sofia Arvizu-Medrano, Montserrat Iturriaga, OMAR HERNANDEZ HERNANDEZ, Elisa Cabrera Díaz, Jeannette Barba León, Ramiro Pacheco-Aguilar, Universidad Autonoma de Queretaro, Queretaro, Mexico
- P3-157 *Salmonella enterica* Identification and Serotyping from Cilantro Using a PCR Multiplex for Serotyping - JUNIA JEAN-GILLES BEAUBRUN, Laura Ewing, Karen Jarvis, Kim Dudley, Gopal Gopinath, Aparna Jayaram, Jessica Elmore, Christopher Grim, Martha Lamont, Tim McGrath, Darcy Hanes, U.S. Food and Drug Administration, Laurel, MD, USA

### Risk Assessment

- P3-151 Food Safety Risks in Restaurants and School Foodservice Establishments: An Investigation of Health Inspection Reports - JUNEHEE KWON, Kevin Roberts, Kevin Sauer, Kansas State University, Manhattan, KS, USA

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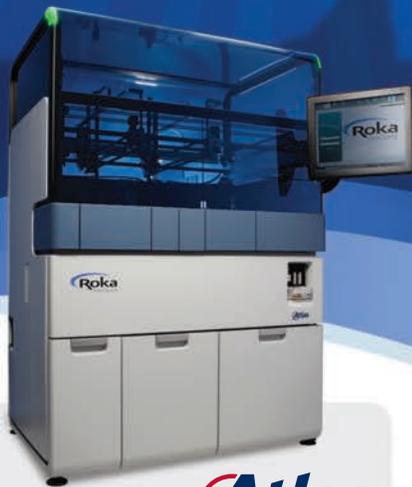
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## BLACK PEARL

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Publix Super Markets, Inc.  
Lakeland, Florida

## FELLOW

Gary R. Acuff

## PRESIDENT'S LIFETIME ACHIEVEMENT

William H. (Bill) Sperber

## HONORARY LIFE MEMBERSHIP

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Morrie Potter  
Bruce Tompkin  
Gloria Swick-Brown

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## DEVELOPING SCIENTISTS

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To be determined

## SAMUEL J. CRUMBINE

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Hamilton County Public Health, Cincinnati, Ohio

# ABOUT THE AWARD RECIPIENTS

## Black Pearl Award

**Publix Super Markets, Inc.**

Lakeland, Florida



Publix was founded in 1930 by the late George W. Jenkins. His philosophy was simple: To operate a supermarket better than anyone else. Eighty-three years later, Publix still embraces that commitment to excellence.

With 157,000 associates, Publix is the largest employee-owned supermarket in the country. Beginning with one store in Winter Haven, FL, today Publix has 1,070 supermarkets in Alabama, Florida, Georgia, South Carolina and Tennessee, with plans to open its first stores in Charlotte, North Carolina in 2014. Their retail stores offer bakery, deli, grocery, meat/seafood, produce/floral and pharmacy departments. Store formats include three GreenWise Markets that feature organic, all-natural and earth-friendly products, seven Publix Sabor



Hispanic-format stores, 160 Publix Liquors and 14 Publix Pix gasoline-convenience stores. In addition to its retail stores, Publix manufactures private label products at its three dairy plants, two bakery plants and a deli plant.

Publix has been named one of FORTUNE's "100 Best Companies to Work for in America" for 16 consecutive years. In addition, Publix's dedication to superior quality and customer service is recognized as tops in the grocery business, most recently by an American Customer Satisfaction Index survey.

For more information, please visit [www.publix.com](http://www.publix.com).



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## Fellow Award

### Gary R. Acuff

College Station, Texas



Dr. Gary R. Acuff is the recipient of the 2013 IAFP Fellow Award, which recognizes professionals who have contributed to IAFP and its Affiliates with distinction over an extended period of time. Dr. Acuff is being recognized nationally and internationally for his service to IAFP and its Affiliates, contributions to food safety through related organizations, and communication to food safety and food protection.

Dr. Acuff currently holds the title of Professor of Food Microbiology and Director at the Texas A&M Center for Food Safety. He has been a member of the Texas A&M University faculty for 33 years, and was designated a Texas AgriLife Research Faculty Fellow for research leadership in 2001. Dr. Acuff served as Head of the Department of Animal Science at Texas A&M from 2004-2010.

Dr. Acuff obtained his B.S. in Biology from Abilene Christian University in 1980 and his M.S. and Ph.D. in Food Science and Technology, specializing in Food Microbiology, from Texas A&M University in 1982 and 1985, respectively. His research has focused on improving the microbiological quality and safety of red meat in all areas of production and utilization. Most recent activities have centered on the effective use of surrogate bacteria for validation of process control in HACCP systems. Additional research interests have included characterizing the presence of *Campylobacter jejuni* in turkey processing and improving the microbiological shelf life of Texas Gulf shrimp.

Dr. Acuff is a 31-year Member of IAFP, presiding as President in 2007. He has served on numerous PDGs and committees, and is a current member of the *Journal of Food Protection* Editorial Board. Dr. Acuff has authored or co-authored over 90 peer-reviewed research publications in scientific journals and numerous chapters in various references and textbooks.

## President's Lifetime Achievement Award

### William H. Sperber

Minnetonka, Minnesota



Dr. William H. Sperber is the recipient of the 2013 IAFP President's Lifetime Achievement Award. This award is given at the discretion of the Association President to recognize an individual who has made a lasting impact on "Advancing Food Safety Worldwide" through a lifetime of professional achievements in food protection. Dr. Sperber has distinguished himself as one of the world's experts in designing and

controlling the microbiological safety and quality of foods.

Dr. Sperber is retired after a 43-year career in microbiology and food protection, having established effective procedures, programs and staffing for Best Foods, The Pillsbury Company and Cargill. Upon completing undergraduate majors in zoology and chemistry, Dr. Sperber earned his M.S. and Ph.D. in Microbiology from the University of Wisconsin – Madison in 1969. Several of his

innovations in graduate school were the development of M-Broth and the Enrichment-Serology procedure for *Salmonella* detection, which became a forerunner of ELISA-based technologies.

Throughout his impressive professional career, he was a pioneer in the development, application and teaching of the HACCP system of food safety management, and has published dozens of peer-reviewed articles, many book chapters and several reference books. Dr. Sperber was likely the first person to use the term "friendly microbiologist" as a means to convince skeptical managers of the merits of proactive food safety measures.

A former chair of the IFT Division of Food Microbiology and the Food Microbiology Research Conference, Dr. Sperber was appointed five times by the U.S. Secretary of Agriculture to the National Advisory Committee on Microbiological Criteria for Foods. He has been an IAFP Member since 1986 and presented the John H. Silliker Lecturer in 2006. He received the Harold Barnum Citation Award in 2006.

Dr. Sperber states, "Today we can recognize that a legion of 'friendly microbiologists,' joined by many 'friendly food protection professionals,' has managed to significantly enhance the safety of the global food supply. Yet, foodborne illness outbreaks continue. We need 'friendly regulators' to join us. Regulatory bodies worldwide could best enhance food safety efforts simply by requiring the implementation and auditing of HACCP systems and prerequisite programs. We must finally recognize that all participants in the food supply chain – producers, processors, distributors, food service operators and consumers – bear unique responsibilities for food protection. Food industry professionals continue to bear the primary responsibility. They are uniquely qualified to lead this effort and must act accordingly."

## Honorary Life Membership Award

The Honorary Life Membership Award recognizes IAFP Members for their dedication to the high ideals and objectives of the International Association for Food Protection and for dedicated service to the Association.

### Anna M. Lammerding

Guelph, Ontario, Canada



Anna M. Lammerding is a recipient of the 2013 IAFP Honorary Life Membership Award. Ms. Lammerding recently retired as Acting Director of the Science to Policy Division at the Public Health Agency of Canada in Guelph.

Ms. Lammerding received her B.S. and M.Sc. from the University of Guelph and her Ph.D. from the University of Wisconsin – Madison. She began her career in food safety with the Canadian federal government in 1982, and spent

the next 31 years transitioning through several branches in three departments: Agriculture and Agri-Food Canada, Health Canada, and the Public Health Agency of Canada. Since 1994, her work focused on developing quantitative approaches for microbial risk assessment and management, and she is recognized internationally for providing leadership to help advance this relatively new field.

Ms. Lammerding has participated on advisory/working groups for organizations such as ILSI (North America and Europe), FAO/WHO and the American Academy for Microbiology. She has published extensively and is an invited speaker and trainer globally. Ms. Lammerding is a member of the ICMSF, and has served on the National Advisory Committee for Microbiological Criteria in Foods and as a delegate to the Codex Committee on Food Hygiene.

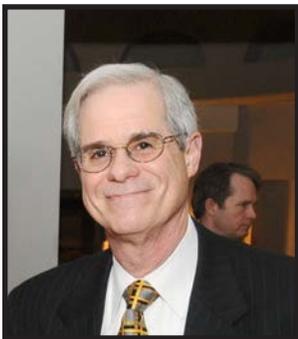
During her 26-year Membership in IAFP, she has participated on numerous committees and PDGs and as a symposium organizer and speaker. In 2003, she served as IAFP President. She received the IAFP Harry Haverland Citation Award in 1998 and the President's Recognition Award in 2007. Ms. Lammerding has also been active for many years at the Affiliate level, serving as President of the Ontario Food Protection Association (OFPA) in 1994. She has also received OFPA's Lifetime Achievement Award and Sanitarian of the Year Award, and the IAFP/OFPA Award of Merit. In 2012, she was awarded a Queen Elizabeth II Diamond Jubilee Medal from the Canadian government in recognition of international food safety leadership.

Ms. Lammerding currently operates AML Consulting in Guelph.

## Honorary Life Membership Award

### Morris E. Potter

Chamblee, Georgia



Dr. Morris E. Potter is a recipient of the 2013 IAFP Honorary Life Membership Award. Dr. Potter is retired from government service.

Dr. Potter received his Doctorate in Veterinary Medicine in 1971 from Purdue University in Lafayette, Indiana, and his M.S. in Veterinary Pathology in 1981 from the University of Georgia in Athens. After a 40-year career in epidemiology and public health, primarily with the Centers for Disease Control and Prevention (CDC) and the

Food and Drug Administration (FDA), Dr. Potter retired in 2010 from government service as the Lead Scientist for Epidemiology in the FDA's Center for Food Safety and Applied Nutrition and as the FDA's liaison

to the CDC. Throughout his extensive career, he also served shorter tours of duty with the Ministry of Agriculture of the Republic of Cyprus, the U.S. Department of Agriculture (USDA), and the International Life Sciences Institute (ILSI).

An IAFP Member since 1993, Dr. Potter has served on the GMA Food Safety Award Selection Committee, the *Journal of Food Protection (JFP)* Management Committee, the *JFP* Board, and as a member of the Microbial Modelling and Risk Professional Development Committee. His many awards received over the years include the 1993 International Association of Milk, Food and Environmental Sanitarians' (IAMFES, now IAFP) Ivan Parkin Award, for outstanding achievements and contributions to the field of food protection.

Dr. Potter has served on a number of national and international professional bodies, including several committees of the National Academy of Sciences, the U.S.-Japan Joint Panel on Toxic Microorganisms, the Conference for Food Protection, IFT's Expert Panel on Emerging Microbial Food Safety Issues and Implications for Control, and the International Commission on Microbiological Specifications for Foods.

Since his retirement, Dr. Potter has consulted with several organizations on food safety and epidemiologic surveillance, including the Food and Agriculture Organization (FAO) of the U.N. His most recent completed project is the revision (with J. Glenn Morris) of *Foodborne Infections and Intoxications*.

## Honorary Life Membership Award

### R. Bruce Tompkin

LaGrange, Illinois



Dr. R. Bruce Tompkin is a recipient of the 2013 IAFP Honorary Life Membership Award. Dr. Tompkin retired from ConAgra in 2002.

Dr. Tompkin received his Ph.D. in Microbiology from The Ohio State University in 1963 and joined Swift & Company in 1964. He became Chief Microbiologist in 1966, retaining that position until 1993 when he served as Vice President of Product Safety for ConAgra Refrigerated Prepared Foods (formerly Armour Swift-Eckrich, Inc.).

During this time, Dr. Tompkin's efforts were directed toward improving

the microbiological safety and quality of food. He approached these goals through research, publications, presentations and serving on national and international committees. Areas of research included control of pathogens in food processing environments and in a wide variety of foods, the use of additives and new processes to improve food safety, and the role of sodium nitrite in controlling *Clostridium botulinum*. A major contribution was sharing best practices for pathogen control with others in industry, government and academia.

Dr. Tompkin has been an IAFP Member since 1988. He is a recipient of IAFP's Harold Barnum Industry Award (1994), the GMA Food Safety Award (2001) and the President's Lifetime Achievement Award (2009). He presented the John H. Silliker lecture at IAFP 2004 and served on the 2005 European Symposium Organizing Committee.

Dr. Tompkin has contributed more than 185 publications, presentations and over 30 book chapters throughout his extensive career. He was a member of both the National Advisory Committee on Microbiological Criteria for Foods for five terms and the International Commission on Microbiological Criteria for Foods for 20 years, serving as an advisor for an additional seven years. Dr. Tompkin helped define the principles of HACCP, the concept of a food safety objective and the role of microbiological testing in food safety management systems. Since his retirement, he continues to promote food safety through participation on committees and other means.

## Honorary Life Membership Award

### Gloria Swick-Brown

Somerset, Ohio



Gloria Swick-Brown is a recipient of the 2013 IAFP Honorary Life Membership Award. Ms. Swick-Brown retired in 2011 as a Sanitarian with the Columbus Public Health Department in Ohio.

Ms. Swick-Brown is a graduate of The Ohio State University in Columbus, holding a B.S. in Agriculture, with majors in Animal Science, Biological Science and Agricultural Education. She earned her M.S. in Administration with a concentration in Health Services from Central Michigan University in

Mount Pleasant. She is a Nationally Registered Environmental Health Specialist/Registered Sanitarian. Throughout her extensive career, Ms. Swick-Brown has worked as Administrator at the Marion County Health Department, Health Commissioner at the Perry County Health Department, and Sanitarian Food Specialist at the Ohio Department of Health, and has acted as teacher and mentor to many during this time.

Ms. Swick-Brown has been an active Member of IAFP since 1991. In 1999, she was named IAFP Sanitarian of the Year, an award given to outstanding sanitarians serving the public and food industry, and in 2008, she received the coveted IAFP Fellow Award. Ms. Swick-Brown has been an active member of the Ohio Association for Food Protection (OAFP) since 1985, progressing through all officer positions three times. As Delegate and Member, she has represented OAFP on the IAFP Affiliate Council for the past 22 years, never missing a meeting. She currently serves as Past Chair of the Affiliate Council.

Ms. Swick-Brown presented at the 4th Dubai International Food Safety Conference in the United Arab Emirates. While an IAFP Board Member, she represented the Association at several Affiliate meetings, from Idaho to Toronto. She has also presented at two IAFP Annual Meetings, co-wrote and co-convened a symposium in 2010, and served on numerous IAFP committees and PDGs. She also served as the Local Arrangements Committee Chair for IAFP 2008 in Columbus, Ohio.

# Harry Haverland Citation Award

**Paul A. Hall**

Wexford, Pennsylvania



As the recipient of the 2013 IAFF Harry Haverland Citation Award, Dr. Paul A. Hall is recognized for his years of dedication and devotion to the Association's ideals and objectives.

Dr. Hall is currently Vice President of Food Safety and Quality for the Flying Food Group, which provides high-quality meals for the airline industry and fresh food solutions for retail. Dr. Hall is also President and Chief Operating

Officer for AIV Microbiology and Food Safety Consultants, Inc., a company dedicated to providing an array of food safety solutions for the global food and beverage industry.

Dr. Hall holds a bachelor's degree in Microbiology from the University of Missouri – St. Louis, a master's in Technology Management from Washington University in St. Louis, and a Ph.D. in Quality Management from LaSalle University in Philadelphia.

During his professional career, Dr. Hall served in many positions in the food industry, including Vice President of Global Food Safety for ConAgra Foods, and Vice President of Global Business

Development for Matrix MicroScience, Inc., a leading technology company focusing on the concentration, capture and detection of foodborne pathogens and spoilage organisms. Previously, he was with Kraft Foods for 17 years, most recently as Chief Microbiology and Food Safety Officer for Kraft, Global. Dr. Hall also held positions as the Microbiology Manager in Corporate Research and Development for Anheuser Busch Companies, Inc., and in Central Research for Ralston Purina Company, both in St. Louis.

Dr. Hall is a 30-year Member of IAFF and served as Association President in 2004. He is the recipient of IAFF's prestigious 2006 Harold Barnum Industry Award and the President's Recognition Award in 2010. In 2007, he was inducted as a Fellow of IAFF and delivered the Ivan Parkin Lecture at IAFF 2009. He has served on several dozen committees and PDGs during his tenure.

Throughout his career, Dr. Hall has been involved with various other professional organizations and institutes, including 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 serves on the editorial boards for both the *Journal of Rapid Methods and Automation in Microbiology* and *Food Safety Magazine*. He has lectured extensively around the world on microbiological food safety, HACCP, rapid testing and detection methods, and microbiological risk management. In 2009, Dr. Hall received the Achievement Award from the National Center for Food Safety and Technology for outstanding contributions to food safety across government, academia, and industry. That same 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.

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# Food Safety Innovation Award

**Ceeram**

Nantes, France



Ceeram is the recipient of the 2013 Food Safety Innovation Award. Located in the city of Nantes in western France, Ceeram is a world leader in molecular virology applied

to food and environmental samples. With its range of ceeram Tools™ real-time molecular tests for viruses, such as Norovirus and Hepatitis, and for parasites, Ceeram offers specifically designed assays for all matrices (food and environmental), adapted to most thermal cyclers. ceeramTools™ kits are specific, robust, sensitive, and ready-to-use, all-in-one, standardized and, above all else, easy-to-use. Based on its recognized know-how and expertise, Ceeram is also the number one choice as partners for several food companies and contract laboratories who are managing issues related to foodborne viruses.

Ceeram was co-founded in 2005 by Dr. Fabienne Loisy-Hamon and M. Benoît Lebeau. Dr. Loisy-Hamon holds a Ph.D. in Microbiology with a specialty in molecular virology. She has studied human enteric viruses in environmental and food samples for the past 12 years, developing molecular methods for the detection of these water- and foodborne-emerging pathogens and studying their persistence in different types of environment. She is an expert member for both the European Committee of Standardization and AFNOR in foodborne virus-focused working groups, aiming at the development of molecular detection of food and feed pathogens. Dr. Loisy-Hamon has published several papers and given several oral communications at international conferences on viruses. Her expertise is recognized at the international level.

M. Benoît Lebeau is a molecular biologist who has studied human genetic identification with Pr. Jean-Paul Moisan. He started his first company in 1997, Atlangene (now a Mérieux Nutriscience company), a laboratory specializing in animal (e.g., species identification, paternity, etc.) and vegetal (GMO testing) genetic identification. In 2000, he formed the subsidiary Atlangene America Inc., in Montreal, Canada, and in 2005, he joined with Dr. Loisy-Hamon to create Ceeram.

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# International Leadership Award

## J. Santos Garcia Alvarado

Nuevo Leon, Mexico



The 2013 IAFP International Leadership Award goes to Dr. J. Santos Garcia Alvarado for his dedication to the high ideals and objectives of IAFP and his promotion of the mission of the Association in countries outside of the U.S. and Canada. Dr. Garcia is a professor at the Universidad Autonoma de Nuevo Leon in Mexico, where he received his B.S. in Microbiology and Doctor of Science. He has been a visiting

scientist at the University of Massachusetts at Dartmouth and at the National Animal Disease Center, USDA.

For over two decades, Dr. Garcia has conducted annual workshops on rapid diagnostic methods of foodborne pathogens and developed training programs in food protection. Along with his

involvement in the organization of various international scientific meetings, Dr. Garcia initiated in 1993 and continues organizing the Annual International Congress on Food Safety in different cities throughout Mexico, with delegates from North America and Latin America. Well-known scientists from around the world have participated in these events, contributing significantly to the improvement of food protection and international networking.

Numerous experts in different countries have recognized Dr. Garcia's international influence and invited him to participate in collaborative efforts, especially ones devoted to addressing emerging food safety issues resulting from the globalization of the food supply.

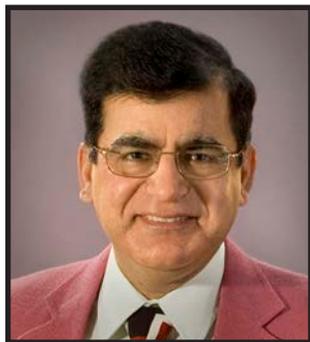
Dr. Garcia joined IAFP in 1994 and has served on the Editorial Board and the Management Committee of the *Journal of Food Protection*. He is Vice President of the Mexican Association for Food Protection (IAFP's Affiliate), and President of the Mexican Association of Food Science. As a member of the Strategy Group of the Institute of Food Technologists, the Mexican Academy of Sciences, the Advisory Committee of the International Foundation for Science and other organizations, he has promoted food safety at an international level. He has co-authored or co-edited six books for food safety professionals, in addition to having been an adviser for nine doctoral, 31 master's and 21 bachelor of science students.

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# GMA Food Safety Award

## Vijay Juneja

Wyndmoor, Pennsylvania



The recipient of the 2013 GMA Food Safety Award is Dr. Vijay K. Juneja. This year's award honors an individual's preeminence in and outstanding contributions to food safety. Dr. Juneja is Lead Scientist of the Predictive Microbiology research project at the Eastern Regional Research Center (ERRC) of the Agricultural Research Service (ARS) branch of the United States Department of Agriculture (USDA) in Wyndmoor, PA. He is

recognized for his research activities dealing with all major aspects of food safety over the past decade and being in the forefront in addressing issues, challenges and potential risks and concerns for consumers. He received his Ph.D. in Food Technology and Science from the University of Tennessee in Nashville.

Dr. Juneja is among the world's leading authorities in food safety research. He has developed a nationally and internationally

recognized research program on foodborne pathogens, with an emphasis on the microbiological safety of minimally processed foods and predictive microbiology. He frequently organizes educational workshops on microbial modeling, specifically on the use of ARS Pathogen Modeling Program. His research program has been highly productive, generating over 300 publications, including over 140 peer-reviewed journal articles, nine books, and 45 book chapters, including eight in the Encyclopedia of Food/Meat Microbiology. Dr. Juneja served as a co-editor of the *International Journal of Food Microbiology* until December 2011 and as an Associate Editor for the *Food Microbiology Section* of the *Journal of Food Science* from 2002–2007. Dr. Juneja currently serves as co-editor of *LWT-Food Science and Technology* and is a member of the editorial Boards of *Foodborne Pathogens & Disease* and *International Journal of Microbiology* and IAFP's *Journal of Food Protection*.

Dr. Juneja is a 13-year Member of IAFP and has served on a variety of Committees and PDGs. He received the IAFP Maurice Weber Laboratorian Award in 2005. He has also received several other awards, including the IFT Research and Development Award (2012), the National Science Foundation (NSF) Food Safety Leadership Award for Research Advances (2012), the ARS-NAA Senior Research Scientist of the year (2002) and the ARS-NAA Early Career Research Scientist of the year (1998). He is a Fellow of IFT (2008) and the American Academy of Microbiology (2013).

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# Frozen Food Foundation Freezing Research Award

**Da-Wen Sun**  
Belfield, Ireland



Professor Da-Wen Sun is the 2013 Frozen Food Foundation Freezing Research Award recipient. This award honors an individual, group or organization for pre-eminence and outstanding contributions to research that impacts food safety attributes of freezing.

As Professor of Food and Biosystems Engineering at the University College Dublin (UCD) in Ireland, Professor Sun is a world authority in food engineering

research and education. His primary research activities include cooling, drying and refrigeration processes and systems, quality and safety of food products, bioprocess simulation and optimization, and computer vision technology. His many scholarly works have become standard reference materials for researchers in the areas of computer vision, computational fluid dynamics modelling, vacuum cooling, etc.

Results of Professor Sun's work have been published in more than 600 papers, including over 250 peer-reviewed journal papers (Web of Science h-index = 41; Google Scholar h-index = 47). He has also edited 13 authoritative books. According to Thomson Reuters' *Essential Science Indicator*,<sup>SM</sup> he is ranked among the top 100 most-cited scientists in the category of Agriculture Sciences in recent years.

Professor Sun serves as the President of the International Commission of Agricultural and Biosystems Engineering (CIGR) and the Editor-in-Chief of Food and Bioprocess Technology (2011 Impact Factor = 3.703, ranked at the 4th position among 128 ISI-listed food science and technology journals).

Professor Sun is a Member of the Royal Irish Academy, the highest academic honor in Ireland. He is also member of Academia Europaea (The Academy of Europe) and a Fellow of the International Academy of Food Science and Technology.

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# Maurice Weber Laboratorian Award

**James S. Dickson**  
Ames, Iowa



Dr. James S. Dickson is the 2013 recipient of the Maurice Weber Laboratorian Award. This award recognizes an IAFP Member for dedicated and exceptional contributions in the laboratory, and commitment to the development and/or application of innovative and practical analytical approaches in support of food safety.

Dr. Dickson is currently a Professor in the Department of

Animal Science at Iowa State University (ISU) in Ames. His research focuses on the control of bacteria of public health significance in foods of animal origin. Prior to his appointment at ISU in 1993, Dr. Dickson was employed by the USDA-ARS as a Research Food Technologist and lead scientist of the Meat Safety Assurance Program at the Roman L. Hruska U.S. Meat Animal Research Center in Clay Center, NE. He was employed in the food industry for three years before joining USDA-ARS. Dr. Dickson holds a B.S. in Microbiology from Clemson University in South Carolina; an M.S. in Dairy Science (Manufacturing) from the University of Georgia in Athens, and a Ph.D. in Food Science and Technology from the University of Nebraska in Lincoln.

Dr. Dickson is a 26-year Member of IAFP and served as President in 2001. He has also served on many IAFP Committees and PDGs, including the editorial boards for *Food Protection Trends* and for the *Journal of Food Protection*. He is a Fellow in the American Academy of Microbiology and is active in the American Society for Microbiology and the Institute of Food Technologists.

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# Larry Beuchat Young Researcher Award

## Walid Alali

Griffin, Georgia



Dr. Walid Alali is the recipient of the 2013 Larry Beuchat Young Researcher Award, which recognizes a young researcher who has shown outstanding ability and professional promise in the early years of their career.

Since 2008, Dr. Alali has been an Assistant Professor of Food Safety Epidemiology at the University of Georgia – Center for Food Safety in Griffin. He earned a Veterinary Medicine degree

from Jordon University of Science & Technology in 2000, an M.S. in Epidemiology with food microbiology training from Kansas State University, Manhattan, in 2003, and a Ph.D. in Epidemiology from Texas A&M University, College Station, in 2007.

Dr. Alali's current research is focused on understanding foodborne pathogen transmission dynamics in animal populations and developing and evaluating practical interventions to mitigate the spread of foodborne pathogens among food animals, particularly poultry. He enjoys conducting research internationally and has developed an international food safety data collection program on the prevalence and concentration, distribution and antibiotic resistance profiles of *Salmonella* on raw poultry at retail in a number of emerging market countries.

Dr. Alali has published 26 refereed scientific journal articles, two book chapters, 17 invited talks (nationally and internationally), and more than 30 scientific abstracts. He is the current President of the Georgia Association for Food Protection (GAFF), serves on the editorial board for the *Journal of Food Protection*, and is a member of the Meat and Poultry Safety and Quality PDG, the *Food Protection Trends* Management Committee, and the Program Committee of the Eighth Dubai International Food Safety Conference. Dr. Alali is also a member of the Global Foodborne Infectious Network-World Health Organization (WHO-GFN) and the European Food Safety Authority's (EFSA) Expert Database.

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# Sanitarian Award

## David Blomquist

Eagan, Minnesota



The 2013 IAFP Sanitarian Award goes to David Blomquist. The Sanitarian Award honors an IAFP Member for dedication and exceptional service to the profession of sanitarian, serving the public and the food industry.

Mr. Blomquist joined the Klenzade Division of Ecolab as a Quality Management Consultant in 1989, traveling to plants to resolve cleaning and sanitation issues. He currently works in the Technical

Support Department, and continues to visit plants to assist in resolving problems or implementing best practices. He has worked in hundreds of plants throughout his career and currently provides support through Ecolab associates to literally thousands more.

He also works on the Food & Beverage Division support line, answering technical questions from Ecolab Account Managers.

Mr. Blomquist grew up on a dairy farm in Almelund, MN, northeast of Minneapolis. He has been working in the food safety field since graduating from the University of Minnesota Department of Food Science and Industries in Minneapolis in 1972.

After graduation, Mr. Blomquist, along with his new wife, Cindy, worked for the Peace Corps in Casablanca, Morocco at *le Laboratoire Officiel 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., Mr. Blomquist worked as a quality control supervisor at Dalbo Cheese in Dalbo, MN, and as a microbiologist at Tony's Pizza Service in Salina, KS. He also held several other positions at Tony's (part of Schwan's Sales Enterprises), including Quality Assurance (QA) Director and QA Manager of Marshall Operations. He later served as Vice President of QA at Sunstate Dairy in Tampa, Florida.

Mr. Blomquist has been a member of IAFP since 1992. He is currently Chair of the Dairy PDG and is also a member of the Food Hygiene & Sanitation PDG.

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## Elmer Marth Educator Award

**Randall K. Phebus**

Manhattan, Kansas



Dr. Randall K. Phebus is the recipient of the 2013 IAFP Elmer Marth Educator Award, which recognizes an IAFP Member for dedicated and exceptional contribution to the profession of educator.

Since 1992, Dr. Phebus has been a Professor of Food Safety and Defense at Kansas State University, Manhattan, in the Department of Animal Sciences and Industry, and a core faculty member in the Food Science Institute. He holds graduate faculty status in K-State's Department

of Diagnostic Medicine and Pathobiology and is an adjunct professor in the Food Science and Technology Department at the University of

Nebraska, Lincoln. Throughout the past 20 years, Dr. Phebus has taught more than 4,000 students in the *Introduction to Food Science* course, both on-campus and through distance education. Additionally, he has taught *Food Microbiology* and regularly provides lectures and lab instruction in *Quality Assurance of Foods* and *Fluid Milk Processing*. Dr. Phebus received his B.S. in Animal Sciences (1986), and M.S. (1988) and Ph.D. (1992) in Food Science and Technology from the University of Tennessee, Knoxville.

Dr. Phebus' research interests include food process validation, application of antimicrobial intervention technologies in food processing, environmental control strategies, and detection and modeling of select agents in food systems. In addition to leading a robust research program involving many graduate students, Dr. Phebus regularly advises undergraduate students in food safety research in the University's Honors and multicultural programs.

A 24-year Member of IAFP, Dr. Phebus has served on numerous committees and PDGs. He has received past recognition as an educator, including the National Committee for Employer Support of the Guard and Reserve Patriotic Employer Recognition, Phi Tau Sigma Outstanding Food Scientist Award, and the K-State College of Agriculture Faculty of the Semester Award in 2010.

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## Harold Barnum Industry Award

**Loralyn Ledenbach**

Glenview, Illinois



As the recipient of the 2013 IAFP Harold Barnum Industry Award, Loralyn Ledenbach is being honored for her dedication and exceptional service to IAFP, the public and the food industry. Ms. Ledenbach is a Principal Scientist at Kraft Foods Group in the Food Safety and Microbiology Department, where she is responsible for leading the Kraft Foods HACCP team. She also serves as liaison for regulatory responses regarding food safety issues with the USDA, FDA and CFIA, and leads the corporate strategy

for product and environmental monitoring testing programs.

Early in her 33-year career at Kraft, Ms. Ledenbach worked on new method development and evaluation, serving as an AOAC Associate

Referee for a rapid biochemical method for confirmation of *Listeria monocytogenes* and on the AOAC *Bacillus anthracis* detection methods committee. She is one of the internal process authorities for Kraft process cheese products, and helped developed the Better Process Control School for Process Cheese, where she continues participate as an instructor. She has authored several papers on to *L. monocytogenes* and *E. coli* identification/enumeration methods, as well as a chapter on the spoilage of dairy products in *Compendium of the Microbiological Spoilage of Foods and Beverages*, and the chapter on methods for acid-producing microorganisms for the *Compendium of Methods for the Microbiological Examination of Foods*.

Ms. Ledenbach holds a B.S. in Biological Sciences from Northern Illinois University in DeKalb and an M.S. in Food Science from University of Illinois in Urbana – Champaign.

Ms. Ledenbach has been a member of IAFP since 1988 and has organized, convened and/or presented at 13 IAFP Annual Meetings. She has served on the *Journal for Food Protection* Management Committee, the IAFP Program Committee, and as Chair of the Dairy Quality and Safety PDG. She is grateful for the opportunities IAFP has given her to meet and share experiences with other Members who share her interest and passion for food safety.

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# Travel Award for State or Local Health or State Agricultural Department Employees

The Travel Award for State or Local Health or State Agricultural Department Employees honors a state or local health or state agricultural department employee working in the U.S.



## Kathryn Bennett

Atlanta, Georgia



Kathryn Bennett is a recipient of the 2013 IAFP Travel Award. Mrs. Bennett is an Agriculture Compliance Specialist with the Georgia Department of Agriculture, Food Safety Division, headquartered in Atlanta. She earned both an undergraduate degree in Dairy Science and a master's degree in Agribusiness Management from the University of Florida in Gainesville.

Mrs. Bennett began her career with the Food Safety Division in 2009 inspecting retail food establishments

in south Georgia. In 2011, her responsibilities and duties expanded to include dairy farm and "Grade A" dairy plant inspections. These specialized inspections require ongoing training, as well as a passion for learning and dedication to continuously improve the necessary

skills and abilities required for this challenging arena of food safety. Mrs. Bennett's daily goal is to utilize her knowledge and experience to help ensure safely manufactured and distributed food products sold not only in Georgia but on a national and global scale as well. The safety of our food supply and protecting public health is a huge responsibility and commitment that she does not take lightly.

In 2012, Mrs. Bennett was grateful for a wonderful opportunity when she was selected to participate in the premier Georgia Department of Agriculture's 2012 Leadership Development Institute. This year-long program was an exceptional experience that will be instrumental in guiding her career. She is also a board member of the Georgia Environmental Health Association (GEHA).

Mrs. Bennett looks forward to participating and learning as much as possible during her IAFP 2013 experience while taking advantage of the tremendous networking opportunities associated with an event of this stature. She plans to journal and document her trip to share her IAFP experience with her colleagues upon returning to Georgia.

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## Barbara Cote

Burlington, Vermont



Barbara Cote is a recipient of the 2013 IAFP Travel Award. Ms. Cote is a Public Health Microbiologist V for the State of Vermont in the Department of Health Laboratory in Burlington.

Ms. Cote began her career with the Vermont Department of Health Laboratory in 1987 as a Laboratory Technician. In 1988, she was promoted to a microbiologist position and since that time has been an integral part of the microbiology laboratory. For the past 10 years, she has served as the

lead microbiologist in the influenza and food testing areas, overseeing the day-to-day testing operations.

Ms. Cote serves on the Association of Public Health Laboratory's (APHL) Food Safety Committee and the APHL ISO 17025:2005 Training Steering Committee, which is tasked with providing available opportunities and resources to laboratories for ISO accreditation. She has been a member of the Food Emergency Response Network (FERN) since 2005 and the newly formed Vermont Food Task Force. Most recently, she was instrumental in obtaining funds from the FDA as one of 31 Cooperative Agreement Program awardees, which will allow the Vermont Department of Health Laboratory Food Testing Program to achieve and maintain ISO/IEC 17025:2005 accreditation and to assist the FDA in routine surveillance and outbreak response.

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## Angela Fritzingler Richmond, Virginia



Dr. Angela Fritzingler is a recipient of the 2013 IAFP Travel Award. As the Lead Scientist for activities associated with foodborne disease surveillance and outbreaks at the Division of Consolidated Laboratory Services (DCLS), the public health laboratory for the Commonwealth of Virginia, Dr. Fritzingler is responsible for overseeing laboratory efforts focused on the analysis of foodborne pathogens. Her areas of expertise include the use of microbiological and molecular methods for the

detection, isolation and characterization of foodborne pathogens.

During her tenure at DCLS, Dr. Fritzingler has also served as a subject matter expert and training coordinator for the Food Emergency Response Network (FERN). She has been actively involved with local, state and federal food safety and emergency response partners, including the Virginia Food Safety Task Force, Virginia Department of Health, Virginia Department of Agriculture and Consumer Services, Food and Drug Administration, Virginia Rapid Response Team, Food Safety and Inspection Service/ United States Department of Agriculture, the Food Emergency Response Network (FERN), and the Centers for Disease Control and Prevention's PulseNet Program.

Dr. Fritzingler looks forward to the opportunity to expand her knowledge in the areas of food safety, food security, policy decision-making and pathogen detection by attending IAFP 2013. She is appreciative of the financial support afforded by this travel award.

## Krissa Jones Atlanta, Georgia



Krissa Jones is a recipient of the 2013 IAFP Travel Award. Mrs. Jones is the Rapid Response Team Program Manager for the Georgia Department of Agriculture. She earned her B.S. in Biology from Shorter University in Rome, GA. Since 1996, she has had the privilege of working for the Georgia Department of Agriculture in the Food Safety Division. In 2009, she was one of five inspectors chosen to join the newly formed

Manufactured Food Section. In January 2013, she was promoted to Rapid Response Team Program Manager to develop a rapid response program to respond to food and feed emergencies and comply with Standard 5 of the Manufactured Food Regulatory Program Standards.

Mrs. Jones has a passion for food safety and is charged with enforcing the state's new processing regulations. She takes every available opportunity to educate industry employees and management on food safety and promote a team effort, and believes that a preventative approach to food safety is better than a reactive approach that usually occurs after a food safety catastrophe.

Mrs. Jones is a member of the Georgia Environmental Health Association and served on the Executive Board from 2005-2010, serving as President during 2008-2009. She was awarded the Georgia Environmental Health Association Member of the Year Award in recognition of outstanding contributions, achievements and devotion to the environmental health profession.

# Travel Award for a Food Safety Professional in a Developing Country

The Travel Award for a Food Safety Professional in a Developing Country honors a food safety professional working full-time in the field of food safety in a developing country.

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## Ratih Dewanti-Hariyadi

Bogor, Indonesia



Dr. Ratih Dewanti-Hariyadi is the recipient of the Travel Award for a Food Safety Professional in a Developing Country (new this year). Dr. Dewanti-Hariyadi is a faculty member in the Department of Food Science and Technology and the Head of Food Science Study Program, Graduate School, Bogor Agricultural University (BAU). She lectures Food Safety and Food Safety Microbiology courses for graduate students and Food Sanitation courses for undergraduates. With her

colleagues at BAU, she developed an e-learning course on Hazard Analysis Critical Control Points, both for students of BAU and University of Udayana, Bali. The course is also currently hosted by Boku University in Austria for other participants.

Dr. Dewanti-Hariyadi is also a researcher and the coordinator for Food Quality and Safety Improvement Program for SEAFST (Southeast Asia Food and Agriculture Science and Technology) Center at BAU. Her research interests include identification, characterization, survival and control of pathogens (*Salmonella*, EHEC, *Staphylococcus aureus*, *Cronobacter* spp.) in foods. In Indonesia, Dr. Dewanti-Hariyadi is a frequent expert and/or resource person for the National Agency for Food and Drug Control (NADFC), Ministry of Agriculture (MA) and the National Standardization Agency. She has chaired the technical subcommittee on Testing Methods for Food Contamination for MA since 2007, has served as a trainer for food inspectors for the NADFC as well as for food industries, and is currently the resource person for the Revision of the National Food Microbiological Standards.

Dr. Dewanti-Hariyadi has been a member of the International Commission on Microbiological Specification for Foods (ICMSF) since 2007, after serving as a consultant for ICMSF in 2004 and 2006. She earned her master's in Food Science (1990) and Ph.D. in Food Microbiology from the University of Wisconsin – Madison. She looks forward to building and strengthening her food safety network with the international experts at IAFP 2013 to improve food safety education, research and training in Indonesia.



## IAFP is Pleased to Announce The IAFP European Student Travel Scholarship Award

This new scholarship award provides travel funding for a full-time student in Europe enrolled in a college or university food-related degree program.

More information will be available in the Fall of 2013 on our Web site.

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# Student Travel Scholarship Award

The Student Travel Scholarship Award provides travel funding for full-time students to attend the Annual Meeting of the International Association for Food Protection and to encourage developing scientists to participate in association activities.

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## Gbenga Adewumi

University of Lagos  
Lagos, Nigeria



Gbenga Adewumi is currently a Ph.D. candidate in Food Microbiology at the University of Lagos in his native Nigeria. He graduated top in his class with a B.S. in Food Science and Technology from the University of Agriculture in Abeokuta, Nigeria, and received his M.S. in Microbiology (researching food microbiology) from the University of Ibadan in Nigeria.

Mr. Adewumi is keenly interested in the development of traditional African fermented foods

from 'art' to 'science,' which includes studying the microbial structure and function of different fermented food ecosystems,

and the use of genotypic techniques in the characterization, identification and differentiation of foodborne microorganisms. His Ph.D. research is focused on starter cultures development and probiotic potentials of *Bacillus* species isolated from fermented *Parkia biglobosa* seeds. His research findings have been published for various local and international scientific meetings and in articles.

Through his supervisor, Mr. Adewumi received a Society for Applied Microbiology (SfAM) New Lecturer grant for his Ph.D. He is also the recipient of a DBT-TWAS Postgraduate fellowship tenable at the Institute of Bioresources and Sustainable Development (IBSD) in India. Other grants received include the SfAM Studentship Grant and the ICFMH Travel Grant.

At IAFP 2013, Mr. Adewumi hopes to share information with scientists from around the globe regarding food safety in Nigeria and create platforms that will foster future collaborations among leading experts in food safety and food protection.

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## Apurba Chakraborty

University of Illinois at Chicago  
Chicago, Illinois



Apurba Chakraborty is a Ph.D. candidate at the University of Illinois at Chicago School of Public Health, Division of Epidemiology and Biostatistics. He graduated in medical sciences and completed his Master's in Public Health from the University of Dhaka in Bangladesh.

Prior to his doctoral studies, Mr. Chakraborty worked as an outbreak investigator for the International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B) for three years. During

that time, he investigated numerous outbreaks involving food safety- and security-related issues, such as foodborne transmission of *Nipah encephalitis*, an outbreak of cutaneous anthrax following slaughtering sick animals and handling raw meat, and cases of mild respiratory illness caused by avian influenza A H5N1 and H9N2 viruses. His investigative experiences with outbreaks of foodborne illnesses and the emerging public health risks associated with food safety and quality in low income countries inspired him to become interested in food safety. Currently, Mr. Chakraborty is analyzing the epidemiologic data of Yersiniosis from multiple U.S. states.

Mr. Chakraborty wants to share the current work he has been conducting on food safety with the leading scientists in the field while attending IAFP 2013.

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## Clarisse S. Compaorè

University of Bobo Dioulasso  
Burkina Faso



of Food Technology at the National Research Center as a junior

Originally from Burkina Faso (West Africa), Clarisse S. Compaorè is a Ph.D. candidate at the University of Bobo Dioulasso in the Department of Food Technology at Burkina Faso. Since 2007, she has been working on spontaneous fermentations of various indigenous food condiments from Burkina Faso, examining their nutritional and microbiological quality. After completing a Master's of Philosophy in Food Microbiology and Biotechnology in 2009, Mrs. Compaorè joined the Department

researcher, where she oversaw safety evaluation of food products in the laboratory of microbiology.

In 2010, Mrs. Compaorè was granted a Ph.D. Fellowship under the Danish International Development Agency (DANIDA) Fellowship Program to undertake her graduate research. Her doctoral project is on Bika, an alkaline *Hibiscus sabdariffa* seeds fermented condiment, with the goal to improve its safety and quality through the use of starter cultures to control the fermentation. Her research has been published in national and international food safety symposia and peer-reviewed journals.

Mrs. Compaorè recognizes the importance of IAFP Annual Meetings for the improvement of food safety and quality worldwide. For this reason, she is excited to attend IAFP 2013, which will provide a great opportunity to share information and meet with leading food scientists, along with building collaboration for the exchange of experiences.

## Amanda M. King

University of Wisconsin – Madison  
Madison, Wisconsin



Amanda M. King is a Ph.D. candidate in the Department of Animal Science at the University of Wisconsin – Madison. Originally from rural Illinois, Ms. King completed her B.S. in Animal Science with a minor in Microbiology at Iowa State University, Ames, and gained valuable industry experience in meat safety through internships with Burke Corporation and Johnsonville Sausage. Upon completion of her undergraduate degree, she pursued her M.S. at Texas A&M in College Station, while

working with Dr. Margaret Hardin to investigate various aspects of meat microbiology. Her thesis research evaluated decontamination

and chilling treatments to ensure the safety of pork variety meats from contamination with *Salmonella*, *Campylobacter* and *Yersinia*.

At UW–Madison, Ms. King works with Dr. Jeff Sindelar, Extension Meat Specialist, in a variety of research, extension and teaching roles. Her research interest lies in enhancing the safety of alternatively cured processed meats by further understanding and supplementing the impact of nitrite on *Listeria monocytogenes* and *Clostridium perfringens*. In addition to collaborating on other safety and quality research projects, Ms. King works with UW–Extension, serving as a food safety resource for meat processors, and assisting with a one-of-a-kind Master Meat Crafter training program for small processors and suppliers within the meat industry.

While attending IAFP 2013, Ms. King looks forward to the exchange of knowledge among members of the food industry, as well as networking with academic and industry experts.

# Student Travel Scholarship Award

The Student Travel Scholarship Award provides travel funding for full-time students to attend the Annual Meeting of the International Association for Food Protection and to encourage developing scientists to participate in association activities.

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## Ismail Odetokun

University of Ibadan  
Nigeria



Ismail Odetokun is a Ph.D. candidate in Veterinary Public Health at the University of Ibadan in his native Nigeria, where he conducts research on food safety as it affects public health. He received a doctoral degree in Veterinary Medicine and a Master's in Veterinary Public Health in June 2008 and November 2011, respectively. Mr. Odetokun's first project was on comparative analysis of *Enterobacteriaceae* and aerobic bacteria spp.

isolated along the processing line of sheep and goats in a typical slaughterhouse, where he identified critical control points and gave recommendations as to the reduction of the hazards. He also

completed research on biofilm formation by foodborne pathogens (*E. coli*, *Salmonella* and *Listeria* spp.) on food contact surfaces and their sensitivity to sanitizers. Mr. Odetokun has several publications to his credit and has won several local and international awards.

Currently working on characterization of methicillin-resistant *Staphylococcus aureus* (MRSA) in Southwestern Nigeria, Mr. Odetokun intends to expound the current carriage rates, prevalence among the occupationally exposed and food animals, their sequence types, phylogeny, clonal clusters, virulence and potential risk factors facilitating the spread of MRSA. He believes that results of these studies will influence government and food regulatory bodies' decisions in formulating food safety policies.

Mr. Odetokun plans to become a university professor. While attending IAFP 2013, he hopes to interact with top-level researchers and professionals, enhancing his knowledge on current, emerging and re-emerging food safety issues.

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## Edyta Margas

The University of Nottingham  
Nottingham, United Kingdom



Edyta Margas is a Ph.D. candidate at The University of Nottingham in the United Kingdom, studying *Salmonella* survival in low  $a_w$  food environments. Her studies are currently funded by Bühler AG. Ms. Margas obtained an undergraduate degree in Food Quality Management and a Master's in Food Technology and Nutrition from Wroclaw University of Agriculture in Poland, her native country. In 2006, she joined Campden BRI, UK, and in 2010 – with the company's support – she began her Ph.D. studies on a part-time basis, switching to full-time in 2013.

While at Campden BRI, Ms. Margas was responsible for conducting research, consultancy and training in new processing methods (e.g., high-pressure processing, ultrasound and pulsed light) and factory hygiene (e.g., hygienic design, factory layout and personnel hygiene). She was also responsible for contamination control in dry foods, led the high-profile 'New Technologies' project, and was a task leader in the EU-funded project, 'SUSCLEAN.'

Ms. Margas has presented at scientific meetings worldwide and chaired a Food Safety Symposium at the 2012 European Symposium on Food Safety in Warsaw, Poland. She is an active member of the EHEDG Dry Materials Handling Subgroup and the EU COST action BacFoodNet.

Recognizing that IAFP 2013 is a leading event in food safety combining both academic excellence and industry focus, Ms. Margas is eager to receive feedback from industry on her studies to make sure she addresses the most current food safety issues.

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## Lorraine Rodriguez-Rivera

Cornell University  
Ithaca, New York



Lorraine Rodriguez-Rivera is a Ph.D. candidate in the Department of Food Science at Cornell University with minors in Microbiology and Infectious Diseases. She holds a bachelor's in Microbiology from the University of Puerto Rico. After taking a Food Microbiology course, she developed an interest in food safety and soon after was

selected to participate in the Cornell Summer Scholars Program in 2007. Her Ph.D. thesis research focuses on the virulence,

pathogenicity and host specificity of *Salmonella enterica*. Ms. Rodriguez-Rivera uses genomic tools to understand why *Salmonella* serovars differ in their ability to cause disease and why some are so successful in doing so.

Through collaboration with research groups inside and outside Cornell, Ms. Rodriguez-Rivera is a co-author on eight peer-reviewed publications, all focused on *Salmonella* and *Listeria*. She has presented seven abstracts at local and national conferences.

Ms. Rodriguez-Rivera's extracurricular activities have been full of remarkable experiences, including serving as Secretary of the IAFP Student Professional Development Group. She is a contributor to the Cornell University Food Safety Wiki and editor of the *Salmonella* page. She aspires to be a professor in her native Puerto Rico and to serve as an inspiration for minority students, encouraging them to pursue careers in food safety.

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## Dong Joo Seo

Chung-Ang University  
Republic of Korea



Dong Joo Seo is a doctoral candidate in the Department of Food and Nutrition at Chung-Ang University in the Republic of Korea. She currently participates in several research projects funded by the Korean Food and Drug Administration (KFDA); the Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF); and the Rural Development Administration (RDA). Her major research is focused on the rapid detection technique for emerging

pathogens and development of the hurdle technology for the control of foodborne viruses in food matrix including seafood.

Viral food poisoning became a serious concern in public health after the 2006 norovirus outbreak at the University. This social issue drew Ms. Seo's attention to investigate the prevalence of foodborne viruses in various foods. By 2012, she was published in two international journals for the detection of hepatitis A virus and hepatitis E virus using reverse transcription polymerase chain reaction enzyme-linked immunosorbent assay.

Because of so few foodborne virus experts in Korea, Ms. Seo aspires to be a norovirus specialist in food safety after completion of her Ph.D. At IAFP 2013, she will present on the topic of "Prevalence of Norovirus, Hepatitis A Virus, Hepatitis E virus, and Rotavirus in Shellfish in South Korea." She looks forward to meeting many food safety specialists and discussing new technologies with them while attending the Annual Meeting.

# Student Travel Scholarship Award

The Student Travel Scholarship Award provides travel funding for full-time students to attend the Annual Meeting of the International Association for Food Protection and to encourage developing scientists to participate in association activities.

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## Elizabeth Noelia Williams

University of Maryland  
College Park, Maryland



Elizabeth Noelia Williams is a doctoral candidate in the Department of Nutrition and Food Science at the University of Maryland College Park (UMCP), working on Microbiological Risk Assessments and Hazard Analysis Critical Control Point (HACCP). Her research focuses on developing practical means for improving the risk basis for HACCP programs at the facility level to more directly link them to public health goals/outcomes.

After completing her B.S. in Food Industries at La Molina National Agrarian University (UNALM), Lima, Peru, Ms. Williams earned a graduate-level certificate in Total Quality Management and Productivity

from UNALM. She co-authored a publication on elaboration of HACCP and quality plans for frozen avocado pulp. She obtained a graduate certificate in food safety risk assessment from UMCP and has diverse food safety experience, including positions in industry, academia and with PAHO/WHO.

A native of Peru, Ms. Williams' career aspirations include implementation of concepts presented in a co-authored chapter on HACCP in *Food Microbiology: Fundamental and Frontiers*. She has presented abstracts at local and national meetings and is active in professional associations, serving as student liaison with the IAFP MMRA Professional Development Group and volunteering with the Capital Area Food Protection Association (CAFFA).

Ms. Williams is honored to be a recipient of the 2013 IAFP Student Travel Scholarship Award for the Annual Meeting, at which she is a symposium co-organizer and speaker. She looks forward to interacting with global food safety leaders at IAFP 2013.

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## Yishan Yang

National University of Singapore  
Singapore



Yishan Yang is a Ph.D. candidate in the Food Science and Technology Program at the National University of Singapore in Singapore. She holds undergraduate and master's degrees from the College of Food Science and Technology at Huazhong Agricultural University in Hubei, China. Originally from China, Ms. Yang's current Ph.D. project focuses on the understanding of the response

of *Salmonella* Enteritidis to food-related environmental stresses. Specifically, she has investigated the influence of temperature and pH adaptation on survival of *S. Enteritidis* in lethal conditions, such as high temperature and simulated gastric fluid, the expression of stress- and virulence-related genes, and the changes in the membrane fatty acid compositions. She hopes to elucidate the bacterial defense mechanism in the lethal conditions and advance our understanding towards pathogen control during food processing.

Upon completion of her studies, Ms. Yang plans to work in a government food inspection agency to ensure safer food for consumers. At IAFP 2013, she will present a poster about her latest research and looks forward to receiving valuable feedback from worldwide experts. Ms. Yang also hopes to acquire information about the on-going projects in the field of food safety.

# 2013 *Journal of Food Protection* Most Cited Publication Award



*The Journal of Food Protection*® Most Cited Research Publication Award was established to recognize top researchers and high quality research publications that contribute to the impact of *JFP* and the field of food safety. The awards will be presented by the *JFP* Scientific Co-Editors at the Editorial Board Reception at IAFP 2013.

## 1st Place

***Detection of Melamine Using Commercial Enzyme-linked Immunosorbent Assay Technology***

Author: Eric A. E. Garber

Volume: 71, No. 3, Pages 590-594, Published March 2008

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## 2nd Place

***Juice-associated Outbreaks of Human Illness in the United States, 1995 through 2005***

Authors: Jazmin D. Vojdani,\* Larry R. Beuchat and Robert V. Tauxe

Volume: 71, No. 2, Pages 356-364, Published February 2008

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## 3rd Place

***Determination of Norovirus Contamination in Oysters from Two Commercial Harvesting Areas over an Extended Period, Using Semiquantitative Real-time Reverse Transcription PCR***

Authors: James A. Lowther,\* Kathleen Henshilwood and David N. Lees

Volume: 71, No. 7, Pages 1427-1433, Published July 2008

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Accelerated Technology Laboratories, Inc.	808	FDA/Center for Food Safety and Applied Nutrition	602	Northland Laboratories	618
Advanced Instruments, Inc.	221	Fisher Scientific	509	NSI Solutions, Inc.	421
AEGIS Food Testing Laboratories	919	Food Quality Magazine/Wiley-Blackwell	326	NuAire, Inc.	518
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Bio-Rad Laboratories	609	LGC Standards	1015	SafetyChain Software	415
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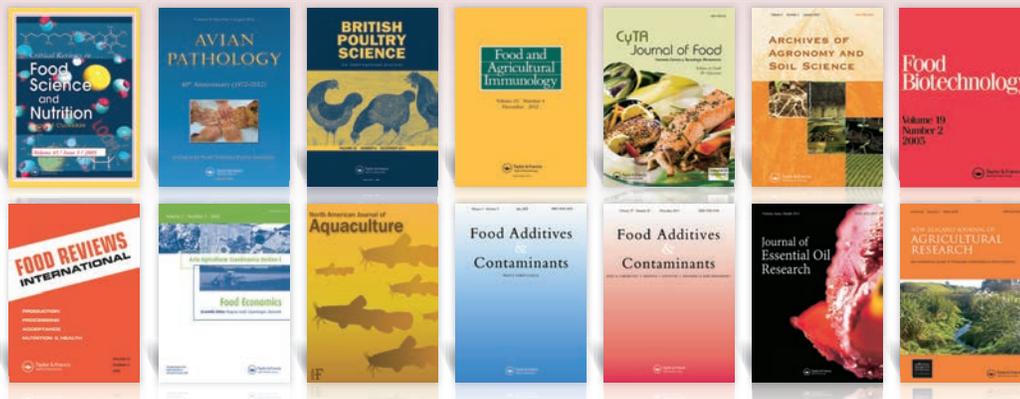
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Airocide is a NASA developed, non-chemical (no ozone), Food Safety Air Sanitation Preventive Controls technology offering the latest innovation in airborne cross-contamination protection for the food industry. This technology is the only air sanitation system that completely mineralizes (bio-converts organics into carbon dioxide and water vapor) airborne bacteria, mold, mycotoxins, viruses, phage, allergens, odors and Volatile Organic Compounds (VOCs). Airocide has no filters to change, produces no harmful by-products, is energy efficient and only requires yearly maintenance. Food Safety, Quality Assurance and the new Food Modernization Act requirements are all satisfied by Airocide.

**Alchemy Systems** 512  
**8015 Shoal Creek Blvd., Suite 1000-N**  
**Austin, TX 78757, USA**  
**Phone: 512.637.5100** **Fax: 512.637.5168**  
**www.alchemysystems.com**

Alchemy is the global leader of training, development, and education products and services essential to successful food safety cultures. By partnering with our customers throughout the supply chain, we increase productivity, create safer working environments, and ensure regulatory compliance from farm to fork. Alchemy protects your employees, products, customers and bottom line.

**Alpha Biosciences, Inc.** 211  
**3651 Clipper Mill Road**  
**Baltimore, MD 21211-1935, USA**  
**Phone: 410.467.9983** **Fax: 410.467.5088**  
**www.alphabiosciences.com**

Alpha Biosciences, Inc. is a world-class producer of dehydrated culture media and distributor of high grade peptones, agar and agarose.

**American Proficiency Institute** 814  
**1159 Business Park Drive**  
**Traverse City, MI 49686, USA**  
**Phone: 855.366.3781** **Fax: 231.941.7287**  
**www.foodpt.com**

American Proficiency Institute (API) offers independent, third-party proficiency testing programs for food microbiology and food chemistry laboratories. Laboratories can monitor their test performance and compare

their results to others performing the same test. The use of lyophilized organism matrix provides superior sample stability. API offers features that allow the laboratory to submit and review reports online. Free Educational Samples and Management Reports are also available. API is accredited by A2LA to provide proficiency testing according to the requirements of ISO/IEC 17043:2010.

**Applied Maths, Inc.** 119  
**13809 Research Blvd., Suite 645**  
**Austin, TX 78750, USA**  
**Phone: 512.482.9700** **Fax: 512.482.9708**  
**www.applied-maths.com**

Applied Maths develops innovative software and data management solutions for the biosciences, with BioNumerics and GelCompar II. BioNumerics combines a powerful, multi-user database environment specifically designed for biological data with the most advanced tools for the analysis of patterns and fingerprints, character arrays, sequences, and trend curves. Areas of specialization are algorithm development for pattern matching, clustering, identification and classification, and integration of virtually all types of biological data. Applied Maths is a leader in bioinformatics running thousands of licenses in in over 90 countries.

**Art's-Way Scientific, Inc.** 927  
**203 Oak Street**  
**Monona, IA 52040, USA**  
**Phone: 563.539.2336**  
**www.buildingsforscience.com**

Art's-Way Scientific, Inc. is rapidly building the world's scientific capacity, with our turnkey, factory built modular laboratory, vivarium, and farm animal housing buildings. When time, flexibility, security and cost factors are critical, an Art's-Way modular building is the only WAY to go. With customer responsiveness and quality as key company values, you get the facility that you need, the way that you need it, and when you need it. That is our promise.

**ASI Food Safety Consultants** 209  
**7625 Page Ave.**  
**St. Louis, MO 63133, USA**  
**Phone: 314.880.8880** **Fax: 314.727.2563**  
**www.asifood.com**

ASI Food Safety Consultants customized solutions include: Third party food safety GMP audits, GFSI Benchmarked Standard Auditing, HACCP set-ups, Training and Verification, GMP Consulting, and Supplier Audits. We can even manage your facility's supplier programs. ASI has been providing audits since 1948. As the leader in Food Safety, we are dedicated to providing the highest level of technical knowledge. As a full-service provider, ASI provides HACCP plan development and verification, training, seminars, and international audits. Please take a look around our web site at [asifood.com](http://asifood.com) and feel free to call for immediate/personal assistance at 800.477.0778!

**Astell Inc. Lab Autoclaves** 125  
**P.O. Box 958**  
**Harrisburg, NC 28075, USA**  
**Phone: 704.455.0456**  
**www.astellinc.com**

**Best Sanitizers, Inc.** 603  
**P.O. Box 1360**  
**Penn Valley, CA 95946, USA**  
**Phone: 888.225.3267** **Fax: 530.265.1922**  
**www.bestsanitizers.com**

Best Sanitizers, Inc. announces its new HACCP Defender™ Low-Moisture, Walk Through Automatic Boot Sanitizing Station. The HACCP Defender adds an additional layer of pathogen protection by reducing cross-contamination from boots before employees enter the food processing area or other critical control zones. Since 1995, Best Sanitizers has been providing the food processing industry with the highest quality products and support

available. Our line of Alpet® sanitizing soaps, hand sanitizers and surface sanitizers are found in over 8,000 food processing plants throughout the U.S. We manufacture to the highest QA and QC standards, so you can use our products with confidence.

**Bia Diagnostics, LLC** 210  
**294 N. Winooski Ave., Suite 116A**  
**Burlington, VT 05401, USA**  
**Phone: 802.540.0148** Fax: 802.540.0147  
**www.biadiagnostics.com**

Bia Diagnostics is a food testing facility, specializing in food allergens. With over 35 years in laboratory experience and 25 years in food allergen testing, we are able to provide you with the most accurate results at the lowest cost. Our laboratory uses the latest technologies in food analysis and is dedicated to providing the most reliable, highest quality results. We lead the field in food allergen safety bringing our lab to you through same day analysis.

We continue to conduct research and develop innovative tools so that food manufacturers can produce the safest products for the most sensitive consumer.

**BioControl Systems, Inc.** 818  
**12822 SE 32nd St.**  
**Bellevue, WA 98005, USA**  
**Phone: 800.245.0113** Fax: 425.603.0070  
**www.biocontrols.com**

Control your world with BioControl's food safety solutions. As a world-wide leader in rapid microbiology test kits for the food industry we offer the most extensive line of proprietary, rapid tests for pathogen detection, quality control and hygiene monitoring. Products featured at IAFP 2013:

**LIGHTNING MVP ICON™** – a ground-breaking new instrument and software platform that combines HACCP and hygiene monitoring with powerful program management capabilities.

**Assurance GDS® Salmonella**—new 8-hour enrichment. Assurance GDS combines the latest advancements in molecular technology and food microbiology to provide faster results with the increased accuracy required to meet today's testing challenges.

**BioFront Technologies** 121  
**3000 Commonwealth Blvd.**  
**Tallahassee, FL 32303, USA**  
**Phone: 850.727.8107** Fax: 866.583.7413  
**www.biofronttech.com**

BioFront Technologies is a Florida corporation focused on providing customers with reliable resources for food allergen analysis. Our MonoTrace® ELISA kits represent the first comprehensive line of monoclonal antibody-based assays aimed at helping customers accurately detect and quantify trace amounts of nut allergens in various food matrices.

MonoTrace® ELISAs incorporate precisely defined sets of monoclonal antibodies targeting major allergenic proteins in potentially life-threatening food allergens including peanut, cashew, almond, walnut, pistachio, and hazelnut. Optimized to detect major food processing-resistant allergens, minimize cross-reactivity and food matrix interference, MonoTrace® ELISAs offer an unmatched union of specificity and sensitivity in food safety testing.

**BioLumix, Inc.** 308  
**107 Aprill Drive**  
**Ann Arbor, MI 48108, USA**  
**Phone: 734.984.3100** Fax: 734.222.1830  
**www.mybiolumix.com**

The versatile, automated BioLumix System offers paperless, simplified, rapid microbiology. The system offers scalability and versatility to meet any lab's microbiological requirements; with a comprehensive range of microbiological tests for raw materials, in process and finished products as well as environmental testing. Expedite product release: Most assay results are completed either the same day or overnight with yeast and mold results in only 48 hours.

Receive early warning of microbial problems: With real-time communication the operator is alerted as soon as detections occur. The BioLumix System is the most versatile alternative method for the detection of yeast and molds, Total aerobic count, coliform, *E. coli*, *S. aureus*, *B. cereus*, and many more. By providing faster results, labor savings, automation, and information connectivity the BioLumix will streamline your testing increasing your laboratory efficiencies while reducing costs.

**bioMérieux, Inc.** 701  
**595 Anglum Road**  
**Hazelwood, MO 63042, USA**  
**Phone: 314.619.3331**  
**www.biomerieux-usa.com**

The bioMérieux-AES/Chemunex Industry team offers a full-range of microbiology solutions for companies worldwide. Come visit us at booth 701 and learn about the latest products in the areas of (a) media/sample preparation using Masterclave®, Dilumat™ and Smasher™ (b) pathogen screening on VIDAS®, (c) prepared culture media, (d) quality indicator screening on TEMPO®, (e) in-process control and release testing using BactiFlow®, D\Count®, and BacTALERT®, and (f) pathogen confirmation using VITEK® and chromogenic media. Be sure to inquire about our services in the area of laboratory workflow optimization. bioMérieux-AES/Chemunex can meet all your microbial analysis needs, from sample collection to final results.

**Biomist** 224  
**573 North Wolf Road**  
**Wheeling, IL 60090-3027, USA**  
**Phone: 847.850.5530** Fax: 847.850.5535  
**www.biomistinc.com**

Learn how other food processors are sanitizing without wiping, rinsing or water. Biomist systems spray a solution of non-flammable concentrated alcohol to quickly sanitize production equipment and surroundings. The penetrating mist reaches into cracks and crevices to kill germs where they hide. Perfect for dry environments and water-sensitive equipment, Biomist's non-corrosive formula evaporates rapidly and is safe for food contact surfaces. Machinery is sanitized in seconds; simply point, spray and walk away!

**Bioquell, Inc.** 811  
**702 Electronic Drive, Suite 200**  
**Horsham, PA 19044, USA**  
**Phone: 215.682.0225** Fax: 215.682.0395  
**www.bioquellus.com**

Bioquell offers a unique range of Hydrogen Peroxide Vapor room and equipment bio-decontamination systems and services used to deactivate various microorganisms such as bacteria and viruses and take plant cleaning to the highest possible level.

The process leaves behind no residue or byproducts and can be fully, validated using the same challenge organism used to verify steam sterilization. Materials, compatibility and safety are well documented across many industry sectors. In emergency situations the technology can be scaled up to be applied as an effective remedial action following a widespread contamination problem or recall.

**Bio-Rad Laboratories** 609  
**2000 Alfred Nobel Drive**  
**Hercules, CA 94547, USA**  
**Phone: 510.741.1000** Fax: 510.741.5630  
**www.foodscience.bio-rad.com**

Bio-Rad manufactures products for food safety testing. Our iQ-Check complete line of validated real-time PCR test kits for detection of pathogens utilize shortened enrichment times, with all kits less than 24 hr, including *Listeria*. Bio-Rad has launched a new automation system, iQ-Check Prep that fits seamlessly into lab workflow without disrupting it. Suitable for high volume testing laboratories, the system offers complete traceability and liquid monitoring. Pipetting is done by air displacement, no vacuum pump systems and no liquid waste. With our patented real-time technology working on the inside, the result is superior sensitivity and specificity.

**Blue Text – IAFP Sustaining Member**

**BIOTECON Diagnostics 3** 824  
**Hermannswerder 17**  
**Potsdam, 14473, Germany**  
**Phone: 49.331.2300.282** **Fax: 49.331.2300.299**  
**www.bc-diagnostics.com**

BIOTECON Diagnostics has superior experience in microbiological testing of food, beverage, cosmetic and pharmaceutical products. We focus on the development, production and marketing of rapid, innovative and validated real-time PCR detection kits for pathogenic, spoilage and genetically modified organisms (GMOs). Our wide-range of kits operate on most any open platform real-time PCR instrument (e.g., able to set time and temperature) providing increased flexibility to our customers.

Due to strong industry partnerships, BIOTECON Diagnostics responds quickly and efficiently to industry needs and concerns while providing economically interesting solutions, such as custom kit development and new technology, including automated robotic sample preparation. As a conscientious company, we are involved and leaders in international PCR method standardization in foods.

**BRC Global Standards** 426  
**21 Dartmouth St.**  
**London, SW1H 9BP, United Kingdom**  
**Phone: 020.7854.8990** **Fax: 020.7854.8901**  
**www.brcglobalstandards.com**

BRC Global Standards is the world's biggest provider of safety and quality Standards Programmes for food manufacture, packaging, storage and distribution. BRC's Global Standards are generated with the help of technical specialists, retailers, manufacturers and certification bodies from around the world, so everything is based on practicality, rigour and clarity. As well as the Standards, as part of the programme, BRC Global Standards offer comprehensive support to help new and established businesses to achieve their quality and safety aims.

**Bruker Daltonics** 212  
**40 Manning Road**  
**Billerica, MA 01821, USA**  
**Phone: 978.663.3660** **Fax: 978.667.5993**  
**www.bdal.com**

Bruker's MALDI Biotyper identifies microorganisms using MALDI-TOF Mass Spectrometry to measure the unique, characteristic molecular fingerprint of the proteins that are found in all microorganisms. The resulting patterns of these proteins are used to reliably and accurately identify a broad range of microorganism down to the species level. Very accurate, highly reproducible, extremely cost effective, fast and easy-to-use, the MALDI Biotyper is designed especially to meet the demands of the microbiology laboratory. This new technology has changed and modernized the way microbial identification is done in clinical laboratories around the world.

**Cascades Tissue Group** 424  
**148 Hudson River Road**  
**Waterford, NY 12188, USA**  
**Phone: 518.880.3676** **Fax: 518.238.0560**  
**www.afh.cascades.com**

Cascades is the fourth largest producer of tissue paper in North America and provides the commercial and industrial sectors with a complete line of quality paper products. Our products include paper hand towels, bathroom tissue, facial tissue, paper napkins, perforated roll towels, wipers, and dispensers.

An innovation leader for over 45 years, our most recent innovation, the Cascades Antibacterial paper towel, is ideal for the food industry. The towel releases an active ingredient onto your hands when drying killing over 99.99% of harmful bacterial on your hands, providing a simple and effective way to further reduce bacterial contamination and transmission.

**CEERAM** 522  
**1 Allee de la Filee**  
**La Chapelle sur Erdre, 44240, France**  
**Phone: 33.2.40.84.25.39** **Fax: 33.2.40.89.45.62**  
**www.ceeram.com**

Ceeram, French-based biotechnology company, develops, manufactures and markets molecular diagnostics RT-PCR real-time test kits for the detection and identification of food and waterborne microbial agents, such as viruses and parasites, as well as typing MLVA assays. Specifically designed for all matrices (food, environmental, health) and most thermocyclers, CeeramTools test kits are specific, robust and sensitive and target enteric viruses (Norovirus, Hepatitis A,...), parasites (*Giardia*, *Crypto*,...) and bacteria (*Vibrio*,...). Ceeram provides expertise, R&D, training and support in the area of food safety, food processes, food supply, food production, cleaning and decontamination.

**Charm Sciences** 612  
**659 Andover St.**  
**Lawrence, MA 01843-1032, USA**  
**Phone: 978.687.9200** **Fax: 978.687.9216**  
**www.charm.com**

Charm Sciences is a world leader in food safety, water quality and environmental diagnostic tests with a portfolio that includes test kits and systems for antibiotics, veterinary drugs, mycotoxins, pesticides, alkaline phosphatase, pathogens, end-product microbial assessment, allergen control, and ATP hygiene. Stop by booth #612 to learn how Charm products and services can protect your brand.

**Cherney Microbiological Services, Ltd.** 822  
**1110 S Huron Road**  
**Green Bay, WI 54311, USA**  
**Phone: 920.406.8300** **Fax: 920.406.0070**  
**www.cherneymicro.com**

Cherney Microbiological Services, Ltd., is a woman-owned contract laboratory specializing in microbiological testing, consulting and technical support for companies in across multiple industries. We utilize our knowledge to culture solutions by mitigating risk for our customer and consumers of their products. ISO/IEC 17025:2005 accredited by A2LA, Cherney is the only science-based, woman-owned business in Wisconsin to achieve this respected benchmark. Cherney also holds WBENC (Women Business Enterprise) certification and supports customers routinely with validation/challenge studies, new technology evaluations, employee training and customized supplier verification programs. A dedication to precision, accuracy and customer service is our benchmark!

**Chestnut Lab** 700  
**3233 E. Chestnut Expressway**  
**Springfield, MO 65802, USA**  
**Phone: 417.829.3728**  
**www.chestnutlabs.com**

Chestnut Labs is a full-service contract testing facility offering a variety of analytical and proximate Chemistry, Microbiology, including bacterial identifications, Research Services including shelf life and challenge studies, Auditing (Food Safety, GMP, Pathogen Environmental Monitoring and Laboratory) Food Safety Consulting, Training, and Educational Services. Chestnut Labs is an ISO 17025 and USDA-EU accredited lab offering flexible solutions for companies. Our experienced staff is focused on superior customer service and a continuous commitment to quality. We are ready to meet your testing needs, 365 days a year, in our state-of-the-art facility.

- Chihon Biotechnology Co., Ltd.** 923  
**2220 Glouceston Lane**  
**Naperville, IL 60564, USA**  
**Phone: 630.670.5701**  
**www.chihonbio.com**
- Founded in 2003, Chihon Biotechnology Co., Ltd. (ChiHonBio) has become a leading manufacturer of Natamycin and Nisin in the world. Natapro is a natural highly effective antimycotic for the inhibition of yeasts, molds and fungi at low-cost. It contains 50% natamycin as the active ingredient and can be custom-blended and packed. We also make LAE (Na-Lauroyl-L-arginine ethylester – CAS #60372-77-2) and will provide technical support for patented application.
- ClorDiSys Solutions, Inc.** 203  
**P.O. Box 549**  
**Lebanon, NJ 08833, USA**  
**Phone: 908.236.4100**  
**www.clordisys.com**
- ClorDiSys Solutions, Inc. offers microbial decontamination services for rooms, tanks, chambers, and entire facilities. Our quick and effective fumigation service is EPA registered as a sterilant, capable of eliminating all bacteria, fungi, viruses, molds, and their spores. Entire facilities can be safely and completely decontaminated in as little as one day. Portable and fixed equipment is also available for sale for routine decontamination.
- Copesan-Specialists in Pest Solutions** 401  
**W175 N5711 Technology Drive**  
**Menomonee Falls, WI 53051, USA**  
**Phone: 800.267.3726**  
**www.copesan.com**
- Copesan is an alliance of regional pest management providers united to provide exceptional service to national accounts, offering the benefits of centralized account management while leveraging local technical expertise. We've been protecting the food industry for over 50 years with our full-service programs customized to the client with sophisticated electronic reporting and trending capabilities for proactive, long-term solutions.
- Corning Incorporated** 219  
**836 North St.**  
**Building 300, Suite 3401**  
**Tewksbury, MA 01876-1253, USA**  
**Phone: 978.442.2200** **Fax: 978.442.2476**  
**www.corning.com/lifesciences**
- Corning, long-recognized by scientists as a supplier of high quality, high value products, introduces a new line of disposable labware specifically optimized for microbiology food testing. Manufactured to the most rigorous of standards, Corning now supplies start-to-finish product solutions that balance superior quality with unsurpassed value. From petri dishes to reusable Pyrex glassware; look to Corning for your microbiology testing needs.
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**Phone: 800.272.7737** **Fax: 561.998.2559**  
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- CRC Press is a premier publisher of scientific and technical content, reaching around the globe to collect essential reference material and the latest advances in food quality and safety to make them available to researchers, academics, professionals, and students. CRC Press products include world-class references, handbooks, and textbooks as well as the award-winning netBASE eBook collections. Visit our booth and get limited-time convention discounts of 20% on all titles. CRC Press is a member of Taylor & Francis Group, an informa business.
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**147 11th Ave.**  
**South Charleston, SC 25303, USA**  
**Phone: 812.483.1099**  
**www.csaprolytics.com**
- CSA Prolytics specializes in Lab Services, Quality Systems and Information Management solutions to assist your company in successfully bringing a safer product to the marketplace. By focusing on all quality systems, CSA adds value to your bottom line with solutions to make your operation more efficient and by reducing operations costs. CSA helps its clients by enhancing their work flow, automation, and internal systems efficiencies. The presence of a CSA onsite laboratory can substantially reduce turnaround time for lab results getting your products to the market faster. CSA Prolytics can get your product to your customers, quickly, efficiently, and cost-effectively.
- CSols, Inc.** 1026  
**131 Continental Drive, Suite 303**  
**Newark, DE 19713, USA**  
**Phone: 302.731.5290**  
**www.csolsinc.com**
- CSols, Inc. is the leading provider of informatics-based strategic planning, implementation, and validation services. Their multidisciplinary team of Chemists, Information Technologists, and Regulatory Specialists deliver informatics solutions ensuring that maximum quality, compliance, and efficiency is achieved within your organization. As a truly independent firm, they provide their customers a high level of expertise and objective guidance while tailoring solutions to their specific needs. For more information about CSols, its services and solution, visit [www.csolsinc.com](http://www.csolsinc.com).
- Deibel Laboratories** 215  
**7165 Curtiss Ave.**  
**Sarasota, FL 34231 USA**  
**Phone: 941.925.1579** **Fax: 941.483.1984**  
**www.deibellabs.com**
- Deibel Labs is one of the oldest and largest food testing labs with 12 locations (10 in the USA, 1 in Canada and 1 in Europe). We are growing and have plans for 1 additional lab in the USA and that will bring the total to 13 worldwide. Deibel is a full-service lab and performs Micro, Chemistry and Pharma testing plus supplies consulting services such as Auditing, Validating, Training and Special Projects. The Deibel philosophy is to provide exceptional service while controlling prices to create value for the client.
- DNV Business Assurance** 619  
**1400 Ravello Drive**  
**Katy, TX 77449, USA**  
**Phone: 708.590.6289** **Fax: 708.590.6303**  
**www.dnvcert.com**
- DNV Business Assurance is one of the few certification bodies that can certify along the entire food production chain, from the primary sector to processing and packaging, from distribution to retail. We are a certification body and training resource for several of the GFSI benchmarked schemes, including SQF, BRC, IFS, FSSC 22000 and GlobalG.A.P. Our services include ISO 9001:2008 Quality MS, ISO 14001, ISO 18001, ISO 22000, ISO 22006, HACCP and customized training.
- DonLevy Laboratories** 220  
**11165 Delaware Pkwy.**  
**Crown Point, IN 46307, USA**  
**Phone: 219.226.0001** **Fax: 219.226.2050**  
**www.donlevy.com**
- DonLevy Laboratories is an accredited, independent, food testing laboratory committed to food safety and focused on preventing microbiological issues and addressing quality challenges throughout the supply chain. Since 1993, DonLevy Laboratories has provided microbiological

expertise, accurate and reliable test results, and practical solutions to the food industry while delivering superior client support. DonLevy Laboratories performs microbiological and chemistry analyses on environmental, raw materials, and finished product samples submitted by food companies industry-wide. In addition to routine testing, DonLevy Laboratories also offers on-site microbiological assessments and sanitation audits, food safety and sample collection training, customized shelf-life evaluations and challenge studies.

**Dow Microbial Control Advanced Oxidation Systems** **821**  
**1500 Lake Cook Road**  
**Buffalo Grove, IL 60089, USA**  
**Phone: 847.808.3496** **Fax: 847.808.3703**  
**www.DowMicrobialControl.com**

Dow Microbial Control innovates with science and technology to provide long-term viable and sustainable microbial control. Our comprehensive global offering provides customers with solutions to optimize formulations, including high performing and technically supported selection of registered actives and products. With world-class people organization-wide and a broad portfolio of microbial control technologies, Dow Microbial Control can help solve most any microbial control problem. From specialty and highly regulated to non-regulated, the company has the experience and essentials for more sustainable microbial protection for products and processes. Visit [www.DowMicrobialControl.com](http://www.DowMicrobialControl.com).

**DuPont Nutrition & Health** **309**  
**Four New Century Pkwy.**  
**New Century, KS 66031, USA**  
**Phone: 913.764.8100** **Fax: 913.764.5407**  
**www.food.dupont.com**

DuPont Nutrition & Health offers a wide range of sustainable, bio-based ingredients and advanced molecular diagnostics to provide safer, healthier and more nutritious food. In the area of food protection, our BAX<sup>®</sup> and RiboPrinter<sup>®</sup> Systems for microbial detection, identification and monitoring enhance food safety and quality programs with speed, accuracy, and convenience. In addition, we offer food companies a multitude of premier ingredients that protect food from organisms such as *Listeria* and yeast and mold. Count on DuPont to combine the best in protective ingredients with the best in molecular testing to help deliver safer products and protect your brand.

**Ecolab** **614**  
**370 Wabasha St. N**  
**St. Paul, MN 55102, USA**  
**Phone: 800.392.3392** **Fax: 651.293.2260**  
**www.ecolab.com**

Ecolab is the global leader in water, hygiene and energy technologies and services that help provide and protect clean water, safe food, abundance energy and healthy environments. Ecolab delivers comprehensive programs and services to meet the needs of customers in the food, energy, healthcare, industrial and hospitality markets in more than 160 countries. Ecolab is committed to supporting customers worldwide, with over 21,500 direct sales and service associates consistently delivering professional, personalized service, total impact solutions and unsurpassed industry expertise.

**ELISA Systems** **403**  
**Unit 10**  
**121 Newmarket Road**  
**Windsor, Queensland 4030, Australia**  
**Phone: 61.7.3625.9000** **Fax: 61.7.3857.8700**  
**www.elisasystems.net**

ELISA Systems produces one of the most extensive ranges of Food Allergen detection kits available today. We are at the forefront of assay development in keeping with current trends for Food Allergen analysis. This is our Specialized Field. We have a large range of NEW Rapid Food Allergen test formats available. Come visit us at Booth #403 to see these Exciting products.

**EMD Millipore** **502**  
**290 Concord Road**  
**Billerica, MA 01821, USA**  
**Phone: 978.715.1483** **Fax: 978.715.1393**  
**www.emdmillipore.com**

BioMonitoring at EMD Millipore is a comprehensive approach to identifying unwanted contaminants in food products. Products range from the earliest point of the manufacturing process through product release and include solutions for indicator organism testing, pathogen testing, beverage spoilage, and environmental monitoring. Our state-of-the-art products, regulatory expertise and outstanding service provide that one invaluable result: safe products.

**EMNS, Inc.– Global Supplier Quality Assurance** **604**  
**2815 Centre Circle Drive**  
**Downers Grove, IL 60515, USA**  
**Phone: 630.620.2741** **Fax: 630.572.6357**  
**www.gsqa.com**

GSQA<sup>®</sup> provides food manufacturers quality and compliance control previously unobtainable through conventional methods. GSQA's highly automated SaaS solution simplifies your quality assurance and compliance activities with customers, suppliers, co-manufacturers, and internal production facilities. GSQA<sup>®</sup> produces the unique e-COA<sup>®</sup> with ASN by electronically collecting COA test results 12 different ways from suppliers, and immediately validating the COA against your specs. GSQA<sup>®</sup> provides automatic SPC analysis, supplier regulatory document compliance, web-based nonconformance management and forward/backward/where-used traceability. Real-time analysis and alerts help reduce plant disruptions, improve yields, and reduce manufacturing variability. Deployed for finished products, GSQA<sup>®</sup> provides full product genealogy with a click.

**EMSL Analytical, Inc.** **908**  
**200 Route 130 North**  
**Cinnaminson, NJ 08077, USA**  
**Phone: 800.220.3675** **Fax: 843.958.8175**  
**www.emsl.com**

As the nation's 4th largest environmental, food, and consumer products testing firm, EMSL Analytical's network of over 31 laboratories and three service centers have been providing quality analytical services since 1981. Our laboratory capabilities include: microbiology analysis, nutritional analysis, various food chemistry analysis, allergens, toxins, and adulteration analysis. EMSL's Food Testing Division laboratories are located in over 13 of our labs conveniently located across North America. Our Food Chemistry and Nutritional Analysis testing is done at our National Headquarters in Cinnaminson, NJ.

**Eurofins** **419**  
**2200 Rittenhouse St., Suite 150**  
**Des Moines, IA 50321, USA**  
**Phone: 515.280.8378** **Fax: 515.280.7068**  
**www.eurofinsus.com**

Eurofins Scientific is an international group of laboratories operating in 32 countries and providing a comprehensive range of analytical testing services drawing on the latest developments in biotechnology. The Group specializes in delivering analytical testing and advisory services to clients from a wide range of industries including the pharmaceutical, food and environmental sectors. With a portfolio of over 100,000 reliable analytical methods and performing more than 80 million assays per year to establish the safety, composition, authenticity, origin, traceability, identity and purity of biological substances, the Eurofins Group is now the leading global provider of bioanalytical services.

**FDA/Center for Food Safety and Applied Nutrition** 602  
5100 Paint Branch Pkwy.  
College Park, MD 20740, USA  
Phone: 888.723.3366 Fax: 301.436.2605  
www.fda.gov

The Center for Food Safety and Applied Nutrition, in conjunction with the Agency's field staff, is responsible for protecting and promoting the public's health by ensuring that the nation's food supply is safe, sanitary, wholesome, and honestly labeled and the cosmetic products are safe and properly labeled.

**Fisher Scientific, Part of Thermo Fisher Scientific** 509  
300 Industry Drive  
Pittsburgh, PA 15275  
Phone: 800.766.7000 Fax: 800.926.1166  
www.fishersci.com

Fisher Scientific is our premier customer channel and services brand providing a complete portfolio of laboratory equipment, chemicals, supplies, sanitation, safety and services. Fisher Scientific offers a range of food and beverage supplies to help protect and enrich our food supplies.

- Biotechnology – genomics- and proteomics-based testing
- Chemicals – includes FDA-licensed, ISO-certified and food industry specific
- Microbiology – maintaining the critical balance between food quality and safe production
- Physical properties testing – instruments and testing tools to measure moisture, temperature, size, density and colors
- Water quality – testing and purification supplies

**Food Quality Magazine/Wiley-Blackwell** 326  
111 River St.  
Hoboken, NJ 07030, USA  
Phone: 480.419.1851 Fax: 480.718.7719  
www.foodquality.com

*Food Quality* celebrates 20 years of delivering editorial excellence to industry leading readers with new name, *Food Quality & Safety*. *Food Quality & Safety* is the established authority as the science-based magazine focused on quality, assurance, safety, and security. A catalyst that unites industry professionals, *Food Quality & Safety* examines current products and technologies used in laboratories; tracks the deployment of tools that the food industry uses; reviews regulatory and sanitation issues; and provides industry news and commentaries.

*Food Quality & Safety* is published bimonthly. To subscribe as well as link to industry content and back issues of the magazine go to [www.foodquality.com](http://www.foodquality.com).

**Food Safety Magazine** 312  
1945 W Mountain St.  
Glendale, CA 91201, USA  
Phone: 818.842.4777 Fax: 818.955.9504  
www.foodsafetymagazine.com

Food Safety Magazine is a bimonthly publication that serves the informational needs of food safety/quality professionals worldwide. Issues feature contributions from food and beverage industry leaders who discuss the regulatory environment, technologies, trends and management strategies essential when applying science-based solutions to assure food safety and quality. Food Safety Magazine has launched a new website, Food Safety Connect, an online marketplace for food safety solutions ([www.foodsafetyconnect.com](http://www.foodsafetyconnect.com)). Food Safety Connect presents reliable, useful information in an easy-to-use interactive format that helps users find products and services. Visit our booth to begin your free subscription and check out Food Safety Connect.

**Food Safety Summit** 503  
155 N. Pfingsten Road, Suite 205  
Deerfield, IL 60015, USA  
Phone: 847.405.4053  
www.foodsafetysummit.com

The Food Safety Summit is a solution-based conference and expo designed to meet the educational and informational needs of the food industry including growers, processors, retailers, distributors, foodservice operators, regulators and academia. The Summit provides a 3-day comprehensive educational program to learn from subject matter experts, trainers, exchange ideas and find solutions to your current job challenges. The Summit has an expansive Exhibit Hall packed with progressive vendors and exclusive networking events to help you make meaningful industry connections. Attend the 16th Annual Food Safety Summit April 7 – 10, 2014 at the Baltimore Convention Center in Baltimore, MD.

**General Food Safety International Consulting, Inc.** 726  
2831 St. Rose Pkwy., Suite 404  
Henderson, NV 89052, USA  
Phone: 855.437.6400 Fax: 248.247.3366  
www.gfsici.com

General Food Safety Int'l. Consulting, Inc. is owned by Perry Johnson. Perry Johnson has been a leader in the field of quality for over 30 years. His team of experts streamlined the implementation approach of most of the international quality and environmental standards. Now his team of experts has adapted the same approach to GFSICI assisting organizations in achieving SQF, BRC, FSSC22000 and ISO22000 certification.

Services include: GAP assessments, development of HACCP plans and HACCP training, food safety manual draft writing, implementation assistance, internal audits, and internal auditor training. We have offices in Chicago, Dallas, Detroit, Denver, Fort Myers, Los Angeles, Nashville and Philadelphia. Call 855.437.6400 for a free consultation.

**Global Food Protection Institute** 725  
49 W Michigan Ave., Suite 300  
Battle Creek, MI 49017, USA  
Phone: 269.350.1811 Fax: 269.441.2996  
www.gfpi.org

The Global Food Protection Institute brings together private, public and independent sectors to identify and solve food protection problems and challenges and serves as a convener of thought leaders in addressing those challenges.

The International Food Protection Training Institute is an initiative of the Global Food Protection Institute that builds training systems, provides evidence-based curriculum, and delivers training for U.S. and international public- and private-sector food safety professionals that spans their entire careers.

**Green Air LLC** 721  
13570 Grove Drive, #296  
Maple Grove, MN 55311, USA  
Phone: 612.720.0992 Fax: 877.959.7327  
www.greenairllc.com

Green Air LLC is a distributor/supplier of products and services. The featured product for the Expo is a chemical drum safety clamp. The clamp is designed to provide many benefits including reduce off-gassing from chemical drums, color code drums, provide a locking mechanism, and improve IAQ. Please visit us at booth #721 for more information.

**HiMedia Laboratories Pvt. Ltd.** 623  
A-516, Swastik Disha Business Park,  
L.B.S. Marg,  
Mumbai 400 086, India.  
Phone : 91.22.6147.1919 Fax: 91.22.6147.1920  
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

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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.

**Hygiena** 411  
**941 Avenida Acaso**  
**Camarillo, CA 93012, USA**  
**Phone: 805.388.8007** **Fax: 805.388.5531**  
**www.hygiena.com**

Hygiena is a microbiology and life science company with over 30-years' experience in developing rapid food safety solutions for the food and beverage industry. Featured at the IAFP Annual Meeting will be the EnSURE monitoring system that measures multiple quality indicators such as Adenosine Triphosphate (ATP), 8 hour rapid Coliform and *E. coli*, and 7 hour Total Viable Count. Hygiena also provides rapid allergen prevention, protein residue detection, and environmental *Listeria* tests, as well as sample collection and dilution devices.

**IEH Laboratories and Consulting** 413  
**15300 Bothell Way NE**  
**Lake Forest Park, WA 98155, USA**  
**Phone: 800.491.7795** **Fax: 206.306.8883**  
**www.iehinc.com**

**IFC—The Industrial Fumigant Company** 1018  
**13420 W 99th St.**  
**Lenexa, KS 66215-1365, USA**  
**Phone: 913.782.7600** **Fax: 913.782.6299**  
**www.indfumco.com**

IFC (The Industrial Fumigant Company) is a national company with over 75 years' experience providing pest management and sanitation solutions to the food and commodity industries. IFC has developed a market leading reputation by focusing on the highest standards of quality coupled with the latest proven technology and tools. Our services include integrated pest management (IPM), fumigation (general, tarp, railcars, bins, barges and ships), routine service, rodent control, bird control, monitoring and inspection. IFC is a full-line distributor for IGRs, residuals, fogging materials, fumigants, traps, rodent baits, insect baits, safety equipment, respirators, gas detection, pheromones, insect light traps and application equipment.

**IFS Americas** 423  
**1610 Des Peres Road, Suite 150**  
**St. Louis, MO 63131, USA**  
**Phone: 314.686.4610** **Fax: 314.686.4602**  
**www.ifs-certification.us**

IFS is a family of Food Safety and Quality Supply Chain Standards. IFS Food, and soon IFS PACsecure and IFS Logistics, is GFSI benchmarked and accepted by retailers around the world. The Standard is clearly written and provides a practical way for suppliers to manage their processes while reducing cost with one globally accepted certification. The standard is growing in use rapidly in North America and is used by nearly 13,000 facilities worldwide. More information about IFS can be found at [www.ifs-certification.com](http://www.ifs-certification.com).

**Infection Control Technologies** 921  
**30 Abeel Road**  
**Monroe Township, NJ 08831, USA**  
**Phone: 888.949.9888** **Fax: 609.409.7059**  
**www.infectioncontroltech.com**

ICT has its roots in the food processing industry. Our parent company Insurance Restoration Specialists, Inc. is a premier disaster recovery, cleaning and reconstruction firm. The Infection Control Technologies division was born out of servicing food processing, health care, first responders and pharmaceutical facilities. Our food industry division specializes in advanced cleaning and sanitation sales and service. Our sanitation team is set up to service clients on an emergency basis and routine quarterly cleaning. Our

process is a dry process that helps mitigate excess contaminated liquids and solids from entering the sanitary systems. In addition, the process is cost effective, saves on labor and provides quality outcomes. ICT will also help design and install system-wide, high efficacy, labor and chemical saving sanitation systems for clients. Our team is made up of the highest trained technicians and professionals. For an SOQ or if you have any questions about what services or products ICT can provide, please feel free to give us a call for a free consultation.

**InnovaPrep** 513  
**132 East Main St.**  
**Drexel, MO 64742, USA**  
**Phone: 816.619.3375**  
**www.innovaprep.com**

InnovaPrep provides novel innovations for highly efficient collection, concentration, and recovery of biological particles from air, surfaces, and liquids. InnovaPrep's Concentrating Pipette—the first truly automated bio concentrator—is the new generation of laboratory equipment enabling effortless and rapid sample preparation and concentration.

**International Association for Food Protection** 100  
**6200 Aurora Ave., Suite 200W**  
**Des Moines, IA 50322-2864, USA**  
**Phone: 800.369.6337** **Fax: 515.276.8655**  
**www.foodprotection.org**

IAFP provides food safety professionals worldwide with a forum to exchange information on protecting the food supply. This is achieved through two monthly journals; the *Journal of Food Protection* and *Food Protection Trends*, an online newsletter titled the IAFP Report and through an Annual Meeting in North America where research topics on food safety issues are presented. IAFP also holds a three-day symposium in Europe each year and a separate, annual international symposium in addition to supporting food safety events in Dubai and China. Membership information can be obtained at our booth or visit our Web site at [www.foodprotection.org](http://www.foodprotection.org).

**International Association for Food Protection — Student PDG** 101  
**6200 Aurora Ave., Suite 200W**  
**Des Moines, IA 50322-2864, USA**  
**Phone: 800.369.6337** **Fax: 515.276.8655**  
**www.foodprotection.org**

Welcome, students, to IAFP 2013! If you wish to take control of your career and enrich your IAFP experience by interacting with other students and networking with professionals, get involved with the IAFP Student Group. We are an organization of undergraduate and graduate students who wish to enhance food safety through active participation in IAFP. Stop by our booth to meet your colleagues, exchange ideas, and become involved in future student group activities.

**International Food Hygiene** 812  
**P.O. Box 4**  
**Driffield, East Yorkshire YO25 9DJ**  
**United Kingdom**  
**Phone: 44.1377.241724** **Fax: 44.1377.253640**  
**www.positiveaction.co.uk**

*International Food Hygiene* is the only magazine of its type and it addresses food safety issues for its global audience of technical and production managers in the foods and drinks sector. For those in the meat sector we produce *International Meat Topics* as a partnering title to *International Food Hygiene*.

**International Production & Processing Expo** 723  
**1530 Cooledge Road**  
**Tucker, GA 30084, USA**  
**Phone: 678.514.1977** **Fax: 770.938.6915**  
**www.ippexpo.org**

International Production & Processing Expo is the largest world's largest annual trade show devoted to the combination of animal protein production and processing. More than 25,000 attendees from over 100 countries will

travel to Atlanta, Georgia the week of January 28 to February 1, 2014 to visit over 1100 exhibiting companies and attend a wide range of workshops and educational programs. For more information go to [www.ippexpo.org](http://www.ippexpo.org).

**Interscience Laboratories Inc.** 608  
199 Weymouth St.  
Rockland, MA 02370, USA  
Phone: 781.792.2133 Fax: 781.792.2134  
[www.intersciencelab.com](http://www.intersciencelab.com)

Interscience has been a global designer, manufacturer and supplier of solutions for quick and safe microbiological analyses for more than 30 years. This year we are introducing our NEW Jumbo line including our NEW JumboGravimat® automatic dilutor and JumboMix® lab blender, for 375 gram sample preparation. At our booth, you can see our FlexiPump® precision filling system and the easySpiral® Dilute for serial dilutions and plating. We will also have many products from our innovative and high quality product line including the new generation easySpiral® plater, BagPage® and BagFilter® filter bags, a complete range of BagMixer® lab blenders, Gravimat® dilutors and Scan® manual and automatic colony counters.

**Invisible Sentinel** 809  
3711 Market St., 8th Floor  
Philadelphia, PA 19104, USA  
Phone: 215.966.6118 Fax: 215.386.3970  
[www.invisible sentinel.com](http://www.invisible sentinel.com)

Invisible Sentinel is premiering its Veriflow™ Technology – An innovative molecular detection system for food safety made simple, accessible and affordable.

Veriflow™ technology offers a new, ultra-sensitive and user-friendly class of diagnostics: Vertical flow-based molecular technology. Invisible Sentinel's patented and AOAC-RI certified Veriflow™ system is the only foodborne pathogen screening test that allows for the sensitivity of RT-PCR tests, but with the ease of use associated with lateral flow diagnostics. The result is an effective and reliable system that enhances operational efficiency and provides quicker turnaround with easy to interpret results for the end user.

**Lancer Sales USA Inc** 904  
1150 Emma Oaks Trail, Suite 140  
Lake Mary, FL 32746, USA  
Phone: 407.327.8488  
[www.lancer.com](http://www.lancer.com)

Our company manufactures the broadest range of Laboratory Glassware Washer/Dryers, providing solutions for critical cleaning applications in the Food Safety industry along with many others. Lancer washers can be found in areas such as QA/QC labs (all washers can be validated), microbiological research, general research, academic and governmental labs. Lancer washers feature multi-level, high temperature washing, self-diagnostic microprocessor programming, HEPA filtered drying (most models), automatic dosing of cleaning chemicals, acid rinse capabilities, and deionized water final rinsing. Using an automated washer saves time, increases your productivity and provides you with repeatable results.

**LGC Standards** 1015  
276 Abby Road  
Manchester, NH 03103, USA  
Phone: 603.622.7660 Fax: 603.622.5180  
[www.lgcpt.com](http://www.lgcpt.com)

**Life Technologies** 524  
5791 Van Allen Way  
Carlsbad, CA 92008, USA  
Phone: 760.603.7200 Fax: 760.602.6500  
[www.lifetechnologies.com](http://www.lifetechnologies.com)

Life Technologies Corporation (NASDAQ: LIFE) is a global biotechnology company dedicated to moving science forward to improve life in meaningful ways for everyone. Our premier brands are the most cited, most trusted in the life sciences industry: Invitrogen,™ Applied Biosystems,® Gibco,® Molecular Probes,® Novex,® TaqMan,® Ambion,® and Ion Torrent.™

**Log5 Corporation** 910  
4 Glenberry Court  
Phoenix, MD 21131, USA  
Phone: 410.329.9500  
[www.log5.com](http://www.log5.com)

Log5 Corporation offers turnkey pasteurization, sterilization and roasting systems for the nut, spice, seed, herb, grain, flour, tobacco and related food industries. Our pasteurization and sterilization technology is non-chemical and maintains the original qualities of the products. We guarantee a 5-log reduction or a specific low plate count in raw and/or roasted low water activity foods. Our fully automated systems can be placed in line with an existing process flow. Capacities range from 500 to 40,000 lbs/hr. Our technology is backed by over 100 years of experience in design and manufacture of advanced food processing systems.

**Meritech, Inc.** 718  
600 Corporate Circle, Suite H  
Golden, CO 80401, USA  
Phone: 303.790.4670 Fax: 303.790.4859  
[www.meritech.com](http://www.meritech.com)

Meritech, a division of Resurgent Health and Medical, is the world leader in automated hand and boot washing equipment. CleanTech brand systems have been used in agriculture, food processing, food service, healthcare, and clean room manufacturing. CleanTech systems perform a fully-automated 12-second hand wash, sanitize, and rinse cycle, removing over 99.98% of dangerous pathogens. CleanTech's green technology uses 75% less water and produces 75% less waste than manual handwashing. By making handwashing quick, easy, and enjoyable, CleanTech increases hand hygiene compliance up to 400% while improving skin quality.

**Michelson Laboratories** 520  
6280 Chalet Drive  
Comemrce, CA 90040, USA  
Phone: 562.928.0553 Fax: 562.927.6625  
[www.michelsonlab.com](http://www.michelsonlab.com)

Since 1970, Michelson Laboratories has provided complete chemical and microbiological analyses to the food and environmental industries throughout the country. We are an ISO/IEC 17025 Accredited Laboratory offering rapid turnaround time, accurate, reliable results and excellent customer service. We specialize in a number of methodologies for indicator organism and pathogen analysis, including PCR, as well as shelf life and challenge studies. Our chemistry lab offers antibiotic residue and melamine testing by LC/MS//MS in addition to nutritional labeling, pesticide analysis and more.

**Michigan State University Online Master of Science in Food Safety** 519  
1129 Farm Lane, Room B-51  
East Lansing, MI 48824, USA  
Phone: 517.884.2078 Fax: 517.432.2310  
[www.online.foodsafety.msu.edu](http://www.online.foodsafety.msu.edu)

Michigan State University's Online Master of Science in Food Safety meets the educational demands of food safety leaders in industry, government, and public health by providing an environment that allows professionals to pursue their educational goals while maintaining personal and professional lives.

Visit us at [www.online.foodsafety.msu.edu](http://www.online.foodsafety.msu.edu).

**Microbac Laboratories, Inc.** 727  
101 Bellevue Road, Suite 301  
Pittsburgh, PA 15229, USA  
Phone: 412.459.1060 Fax: 866.515.4668  
[www.microbac.com](http://www.microbac.com)

Microbac Laboratories, Inc. is one of the world's most diversified commercial testing and analytical laboratory groups. Microbac performs a wide variety of microbiological and chemical analyses for the food industry. Complemented by a national network of laboratories, Microbac is also

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capable of supporting a wide range of specialized testing needs. For over 40 years, Microbac has provided a vast array of industries with numerous comprehensive certified analytical and sampling services, including: food chemistry, food microbiology, nutritional labeling, environmental, pharmaceuticals, nutraceuticals/vitamins, antimicrobial efficacy, cosmetics, agrochemical, mechanical, biofuel, and physical/failure testing.

**Microbiologics** 627  
**200 Cooper Ave. N**  
**St. Cloud, MN 56303, USA**  
**Phone: 320.253.1640** **Fax: 320.253.6250**  
**www.microbiologics.com**

Microbiologics® produces the highest quality biological reference materials for quality control testing. We are the only accredited supplier to offer the Big 6 Shiga-Toxin *E. coli* (STEC) control strains in ready-to-use formats, saving time and money without compromising accuracy. World-class expertise, quality, customer service, and technical support at the ready have made Microbiologics a global leader in quality control microorganisms. Visit us at Booth #627 for more information!

**Microbiology International** 325  
**5111 Pegasus Court, Suite H**  
**Frederick, MD 21704, USA**  
**Phone: 301.662.6835** **Fax: 301.662.8096**  
**www.800ezmicro.com**

Microbiology International will be demonstrating MediaBox, our new solution for ready-to-use liquid culture media. MediaBox is an easy-to-use and store, stackable box with internal bladder filled with fresh, sterile, prepared enrichment broth. Also on display will be our R.A.P.I.D. LT real-time PCR system, spiral plater, media preparators/plate pourers, laboratory autoclaves, innovative sample preparation instruments and a comprehensive line of rapid bacterial screening and identification kits for common food pathogens.

**Micro Identification Technologies** 218  
**970 Calle Amanecer, Suite F**  
**San Clemente, CA 92673, USA**  
**Phone: 949.388.4546** **Fax: 760.388.4547**  
**www.micro-identification.com**

Micro Imaging Technology Inc. ("MIT") objectives are to become a global leader in developing, supporting and marketing rapid systems and processes that detect and identify microbial organisms. MIT has developed and patented a technology for rapid microbe identification. The technology is a non-biological identification process that is extremely fast, easy to use and does not rely on conventional chemical or biological processing, fluorescent tags, gas chromatography or DNA analysis.

The MIT advantages are the system's low cost, ease of use and accompanying significant reduction in the time and expense for testing procedures and the ability to test for multiple bacteria.

**MOCON Inc.** 918  
**7500 Mendelssohn Ave. N**  
**Minneapolis, MN 55428, USA**  
**Phone: 763.493.6370** **Fax: 763.492.6358**  
**www.mocon.com**

MOCON® is leading the way in fast, low cost, microbial screening for food and beverages. MOCON's GreenLight® microbial detection instruments and assays offer food producers the ability to screen incoming ingredients, in-process or finished product for live bacteria, yeasts and molds and obtain results in just a few hours, at costs much lower than current methods. The systems are safe, fast, easy to use and do not require an extensive lab or a certified technician to operate.

**N2N Global** 105  
**585 E State Road 434**  
**Longwood, FL 32750, USA**  
**Phone: 888.783.5088** **Fax: 407.331.5158**  
**www.n2nglobal.com**

N2N Global is an enterprise software company that develops, manufactures, markets, distributes, and services application software for companies operating in the perishables and food supply chain. N2N Global includes four major divisions: Enterprise Applications, N2N Global Business Services, Information Technology & Infrastructure, and Mobile Technologies. Through the combination of our four business units, N2N Global delivers turnkey solutions on an integrated platform.

**Napason North America LLC** 803  
**505 N Broadway, Suite 208**  
**Fargo, ND 58102, USA**  
**Phone: 701.478.3020** **Fax: 701.478.3021**  
**www.napason.com**

Napason's validated, chemical free steam-vacuum pasteurization technology offers custom food safety solutions with a guaranteed 5 log reduction that preserves product quality. Our low maintenance systems are free of cross-contamination concerns and process supported by fully documented traceability. The gentle treatment with natural steam protects nutritional and sensory qualities of nuts, seeds, grains, dried fruits, herbs/botanicals, dried vegetables, and other low moisture foods.

**National Center for Food Protection and Defense** 625  
**R285 LES Bldg.**  
**1954 Buford Ave.**  
**St. Paul, MN 55108, USA**  
**Phone: 612.624.2458** **Fax: 612.624.3229**  
**www.ncfpd.umn.edu**

The National Center for Food Protection and Defense (NCFPD) is a Homeland Security Center of Excellence located at the University of Minnesota, a multidisciplinary research consortium addressing the vulnerability of the nation's food system to attack through intentional contamination with biological or chemical agents.

NCFPD's research and education program is aimed at reducing the potential for contamination at any point along the food supply chain and mitigating the potentially catastrophic public health and economic effects of such attacks. The program incorporates cutting-edge research across a wide range of disciplines, taking a comprehensive, farm-to-table view of the food system.

**National Environmental Health Association** 815  
**720 S Colorado Blvd., Suite 1000-N**  
**Denver, CO 80246, USA**  
**Phone: 303.756.9090** **Fax: 303.691.9490**  
**www.neha.org**

The National Environmental Health Association is a professional society with over 5,000 members in the public and private sectors as well as in universities and uniformed services. NEHA's mission, "to advance the environmental health and protection professional for the purpose of providing a healthful environment for all" is represented in the products and services offered to advance the EH professional through training, education, networking, professional development and policy involvement opportunities. The basis for the association's activities is the belief that the professional who is trained, educated and motivated is the professional who will make the greatest contribution to a healthy environment.

**The National Food Lab** 819  
**365 N Canyon Pkwy. #201**  
**Livermore, CA 94551, USA**  
**Phone: 925.551.4205**  
**www.thenfl.com**

The National Food Lab is a consulting and testing firm providing creative, practical and science-based insights to solve food safety, quality and product and process development challenges for food and beverage

companies. Whether your challenge is updating your food safety plan to comply with Food Safety Modernization Act (FSMA) or adding additional quality programs to meet customer requirements, our food safety experts can validate processes, develop food contaminant testing programs, set up supplier evaluations programs and consult to determine the best pathway to keep your products safe.

**National Registry of Food Safety Professionals** 920  
**7680 Universal Blvd.**  
**Orlando, FL 32819, USA**  
**Phone: 800.446.0257** **Fax: 407.352.3603**  
**www.nrfsp.com**

National Registry of Food Safety Professionals (NRFSP) offers comprehensive certification programs for food safety managers. Nationally accredited through CFP/ANSI, and globally accredited in ISO 17024 through ANSI, we provide many options for the training and assessment of managers and food handlers, including paper and pencil and proctored online exams in multiple languages, as well as diagnostic reporting and tracking of data. NRFSP also offers an innovative HACCP exam. Learn more at [www.nrfsp.com](http://www.nrfsp.com) or call 1.800.446.0257.

**Nelson Jameson** 405  
**2400 E 5th St.**  
**P.O. Box 647**  
**Marshfield, WI 54449, USA**  
**Phone: 715.387.1151** **Fax: 800.842.0540**  
**www.nelsonjameson.com**

Nelson-Jameson has been a trusted source of food processing supplies since 1947. Our Buyers Guide for the Food Industry features thousands of items used daily in food plants and includes hard-to-find specialty items. Products include safety and personnel, production and material handling, sanitation and janitorial, processing and flow control, laboratory and QA/QC, bulk packaging and ingredients. The catalog also features a wide assortment of color-coded and metal detectable items to keep your product safe. Headquarters in Marshfield, Wisconsin, warehouses in California, Idaho, Pennsylvania, and Texas. Call 800.826.8302 or visit: [www.nelsonjameson.com](http://www.nelsonjameson.com) to request your FREE copy of our Buyers Guide today

**Neogen Corporation** 425  
**620 Leshler Place**  
**Lansing, MI 48912, USA**  
**Phone: 800.234.5333** **Fax: 517.372.0108**  
**www.neogen.com**

Neogen's comprehensive line of rapid food safety testing products is designed to help food processors and producers reduce risk, protect their brand, and comply with regulations. Our products include simple, fast and easy tests for food allergens, including milk, soy, peanut and egg residues; spoilage organisms (e.g., yeast and mold), using the innovative Soleris® optical microbial system that rapidly detects contamination by monitoring media changes generated by microbial growth; AccuPoint® 2 ATP system featuring radio frequency identification (RFID) technology, which automatically selects test site information, making sanitation testing easier than ever to perform and interpret; quality Acumedia® dehydrated culture media; and the ANSR™ test system, a quick isothermal test method that definitively detects pathogen DNA in food and environmental samples in as little as 10 minutes.

**Neutec Group, Inc.** 409  
**200 Central Ave.**  
**Farmingdale, NY 11735-6918, USA**  
**Phone: 516.870.0877** **Fax: 516.977.3774**  
**www.neutecgroup.com**

Neutec Group provides a comprehensive line of microbiology product solutions replacing tedious, repetitive, time-consuming activities with standardized, automated processes, which enhance the efficiency and

productivity of the busy food microbiology lab. At the IAFP Annual Meeting, we will exhibit our newest line of Automated Colony Counters, Bag Dilutors, a<sub>w</sub> – WaterMeters, Spiral Platers, Bag Mixers, Block Digestors and Distillators, AgarFillers, Media Preparators, Our all new MultiSpectral Imager and more.

**Northland Laboratories** 618  
**1818 Skokie Blvd.**  
**Northbrook, IL 60062, USA**  
**Phone: 847.272.8700** **Fax: 847.272.2348**  
**www.northlandlabs.com**

See how Northland Laboratories helps your company with “Moving Food Safety Forward” in preparing your organization with new requirements for industry including the Food Safety Modernization Act. Our knowledgeable, approachable and friendly scientists will work with you and your partners to best prepare your company.

Since 1949 Northland Laboratories has provided a comprehensive portfolio for your organization in food safety/microbiology testing, food chemistry testing, food safety programs, training, shelf life and challenge studies, sensory research and consulting, validation studies, contract research, consumer complaints, nutrition labeling, auditing services and regulatory support. ISO/IEC17025:2005 Accredited.

**NSI Solutions, Inc.** 421  
**7212 ACC Blvd.**  
**Raleigh, NC 27617, USA**  
**Phone: 919.957.9672**  
**www.nsi-es.com**

NSI Solutions is an accredited manufacturer of certified reference materials for analytical testing. Products include microbiological controls for 3M Petrifilm, AOAC and BAM methods, quantitative STEC reference standards, pesticide residue standards and food matrix reference materials. Also available: custom reference standards, and certified reference materials for sugars, organic acids, sugar alcohols and contaminants. Accredited to ISO17025, ISO34, ISO17043 and ISO9001.

**NuAire, Inc.** 518  
**2100 Fembrook Lane**  
**Plymouth, MN 55447-4722, USA**  
**Phone: 763.553.1270** **Fax: 763.553.0459**  
**www.nuaire.com**

Quality and Dependability for the Future. For over 40 years NuAire has provided ergonomically designed laboratory equipment to research professionals in quality control laboratories for food and beverage testing. NuAire has over 100,000 Biological Safety Cabinets located in 150 countries and has equipment located on all 7 continents. In every NuAire product you'll find brilliant but practical design, keen attention to detail in every phase of the fabrication and assembly process, thoroughly tested, outstanding value, and dependable service. NuAire provides Biological Safety Cabinets, CO<sub>2</sub> Incubators, Laminar Airflow Workstations, Ultra Low Temperature Freezers, Biological Enclosures and more.

**Orkin, LLC** 805  
**2170 Piedmont Road NE**  
**Atlanta, GA 30324, USA**  
**Phone: 800.ORKIN.NOW** **Fax: 404 888 2760**  
**www.orkincommercial.com**

Orkin's Gold Medal Protection is a comprehensive Integrated Pest Management program specifically designed for the highly regulated food processing and packaging industries. Customers benefit from a heavy emphasis on quality assurance and a comprehensive reporting system that meets or exceeds HACCP regulations and the requirements of external audits. To learn more or to request a free consultation, call 1.800.ORKIN.NOW or visit us at <http://www.orkin.com/commercial/>.

**Blue Text – IAFP Sustaining Member**

**Pall Corporation** 400  
25 Harbor Park Drive  
Port Washington, NY 11050, USA  
Phone: 866.905.7255 Fax: 516.801.9591  
www.pall.com/foodandbev

Pall Corporation is a global filtration, separation and purification leader providing solutions to meet the critical fluid management needs of customers across the broad spectrum of life sciences and industry. We work with our customers to advance health, safety and environmentally responsible technologies.

Pall Food and Beverage provides products and services to ensure product quality and maintain process reliability in beverage and food production. Our solutions also assist in consumer protection, the reduction of operating costs and waste minimization.

**ParTech** 1013  
8383 Seneca Turnpike  
New Hartford, NY 13413, USA  
Phone: 800.533.2118  
www.partech.com

ParTech, Inc. (PAR) has been a leading provider of restaurant and retail technology for more than 30 years. PAR recently introduced its intelligent checklist and food safety (HACCP) platform that reduces direct labor spent on compliance and checklist management tracking by up to 60% compared to its biggest competitor (pen and paper). PAR EverServ® SureCheck™ is a PDA-based, automated solution that provides checklist management platform comprised of three integrated technologies that are easy to use and quick to deploy: mobile application (running on Windows Mobile ruggedized devices), multi-mode wireless temperature measuring device, and cloud-based enterprise configuration and reporting server application.

**The Partnership for Food Safety Education** 223  
2345 Crystal Drive, Suite 800  
Arlington, VA 22202, USA  
Phone: 202.220.0705 Fax: 202.220.0873  
www.fightbac.org

The mission of the non-profit Partnership for Food Safety Education is to end illness and death from foodborne infections in the United States. The Partnership delivers trusted, science-based behavioral health messaging. Partnership materials are distributed to hundreds of thousands of consumers each year through our partners, web site, and directly through more than 12,000 educators ("BAC! Fighters"). The Partnership unites representatives from the food industry, professional societies in food science, nutrition and health consumer groups, the U.S. Department of Agriculture, the Department of Health and Human Services, the Centers for Disease Control and Prevention, and the Food and Drug Administration to educate the public about preventing foodborne illness.

**PathoGenetix, Inc.** 902  
12 Gill St., Suite 3150  
Woburn, MA 01801, USA  
Phone: 781.937.5550 Fax: 781.938.0060  
www.pathogenetix.com

PathoGenetix, Inc. is a commercial-stage developer of an automated system for rapid bacterial identification from complex samples. PathoGenetix is a venture-backed company that has received more than \$50 million in technology development funding from the Department of Homeland Security. The core GSS technology isolates and analyzes DNA directly from an enriched biological sample—without the need for a cultured isolate—and provides results in just five hours, days faster than current methods. GSS has broad applicability in food safety, industrial microbiology, and clinical diagnostics and research.

**Presage Analytics, Inc.** 225  
2124 Y St.  
Lincoln, NE 68503, USA  
Phone: 800.309.1704  
www.presageanalytics.com

Presage Analytics provides the food processing industry tools to gain knowledge from data collected and effectively take preventative measures in food safety and quality. View and manage microbial, allergen, and quality testing with dynamic graphs and fully customizable screens; gain detailed insight into the operation of plants through easy-to-use and easy-to-understand trending capabilities; make quick, effective decisions and stay up to date with daily operation of plants with robust reporting and alerting systems; monitor corrective actions and non-conformity reports effortlessly. We at Presage are particularly dedicated to continued service, value, and support for our customers. Check out www.presageanalytics.com for more information.

**Procter & Gamble** 500  
1 Windy Knoll  
Columbia, SC 29229 USA  
Phone: 803.447.5616 Fax: 803.699.9015  
www.pgpro.com

Procter & Gamble Professional is the the "Away From Home" division of P&G serving the retail, foodservice, and hospitality industries. P&G Professional offers complete solutions for your cleaning, sanitation and food safety needs. P&G Professional provides a complete line of cleaners that are safe and easy to use; a national service network, automatic dispensing systems, tools and equipment, and a comprehensive Food Safety Program.

**Puritan Medical Products Companies, LLC** 722  
31 School St.  
Guilford, ME 04443, USA  
Phone: 207.876.3311 Fax: 207.876.3130  
www.puritanmedicalproducts.com

Puritan Medical Products is the leading US manufacturer of quality single-use medical diagnostic devices, specializing in specimen collection. We offer an extensive line of tipped applicators including PurFlock® Ultra and HydraFlock® for superior specimen collection and release. Now offering media filled transport systems for clinical, diagnostic and environmental testing.

**Q Laboratories, Inc.** 113  
1400 Harrison Ave.  
Cincinnati, OH 45214-1606, USA  
Phone: 513.471.1300 Fax: 513.471.5600  
www qlaboratories.com

Q Laboratories, Inc. has served the food and dietary supplement industries since 1966, offering comprehensive microbiology and chemistry laboratory and research and development services. An ISO/IEC 17025 Accredited, GMP/GLP compliant laboratory, Q Laboratories, Inc. can provide services to meet all of your testing and quality assurance needs. Capabilities include: Pathogen Detection, Microbial Identification, Nutritional Analysis, Allergen Screening, Challenge/Shelf Life Studies, Environmental Monitoring Programs, and Method Validation/Verification studies to help test kit manufacturers demonstrate proficiency of proprietary methods. Please visit IAFP Booth # 113 to discover how Q Laboratories can help you continue to produce safe, high quality products.

**QC Laboratories** 222  
702 Electronic Drive  
Horsham, PA 19044, USA  
Phone: 215.355.3900 Fax: 215.392.0626  
www.qclaboratories.com

QC Laboratories is a full-service, ISO 17025 accredited laboratory group with six sites across the Northeast, providing analytical services to the Food, Dairy, Pharma and Environmental community. With over 70 years of microbiology and chemistry service experience, QC Labs is your LOCAL laboratory-of-choice across New York, New Jersey, Pennsylvania, Maryland, Delaware and beyond.

**QIAGEN** 909  
19300 Germantown Road  
Germantown, MD 20874, USA  
Phone: 240.686.7700  
www.qiagen.com

Building on our expertise in molecular testing for various fields of public safety and quality control, QIAGEN is the leading global provider of sample and assay technologies that offers innovative, high-quality solutions for food safety testing. Our suite of testing kits covers all segments of food testing, including DNA purification, pathogen and genetically modified organism detection, and ingredient authentication. Streamline your work by choosing QIAGEN solutions that cover the whole workflow and emphasize modern technologies with straightforward and rapid protocols. Learn more at www.qiagen.com.

**Quality Assurance & Food Safety Magazine** 813  
4020 Kinross Lakes Pkwy.  
Richfield, OH 44286, USA  
Phone: 330.523.5400 Fax: 330.659.0823  
www.qualityassurancemag.com

QA Magazine, a bi-monthly publication from GIE Media, is written for managers and professionals in the food and beverage processing industry with a specific focus on food safety, quality and defense. Filled with practical insights and analysis of plant processes, practices and current issues, the QA media family—including our print publication, web site and e-newsletters—addresses the growing market need for targeted information in these key areas. For more information, visit www.qualityassurancemag.com.

**R & F Laboratories** 318  
2725 Curtiss St.  
Downers Grove, IL 60515-4002, USA  
Phone: 630.969.5300 Fax: 630.969.5303  
www.rf-labs.com

R & F Laboratories is a full-service Microbiology Laboratory involving research, testing and consulting for the food, cosmetic, environmental and industrial arenas. We are committed to providing quality information through precise, accurate, and dependable testing. Research varies from routine challenge or shelf-life studies to more complex analyses. Consulting includes HACCP services, audits, microbial problem solving, QC/QA training and Food Microbiology teaching. R & F Products has 13 media patent/patent applications and R & F Laboratories is the distributor of these chromogenic plating media for more specific identification of pathogens: *Escherichia coli* O157:H7, *Listeria monocytogenes*, *Salmonella*, *Bacillus cereus*/*Bacillus thuringiensis*, *Enterobacter sakazakii*, *Bacillus anthracis*, *Listeria sp.*/*Listeria monocytogenes*, *Listeria sp.*, *Shigella sp.*, *Campylobacter jejuni*/*coli*, *Yersinia pestis* and STEC.

**Rentokil North America Pest Control** 914  
500 Spring Ridge Drive  
Wyomissing, PA 19610, USA  
Phone: 610.372.9700  
www.rentokil.com/us

Rentokil North America Pest Control is a full service company and operates as Ehrlich, Presto-X, Western Exterminator, Rentokil and Tetengo. As the world's largest commercial pest management company, Rentokil is

the leading provider of integrated pest management services. In addition to Rodent and Insect Management, we also provide Bed Bug, Termite, Bird and Vegetation Management, Fumigation and Bioremediation Services.

We strive for early detection, accurate monitoring and precise product application to eradicate your pest problems. There's no pest problem too large or small for our team of pest experts – our operations in North America specialize in multi-site facilities across the U.S., Mexico, or Canada.

**Roka Bioscience** 523  
20 Independence Ave., 4th Floor  
Warren, NJ 07059, USA  
Phone: 908.765.2246 Fax: 908.604.2008  
www.rokabio.com

Roka Bioscience, a leader in molecular technology development, is focused on advancing testing methods for the food safety industry. Our highly accurate, rapid molecular assays and instrument systems have been developed to help food manufacturers mitigate risks and protect their brands while realizing new levels of productivity and efficiency. Roka is dedicated to partnering with the industry on solutions that ensure highly accurate and rapid results to meet increasing testing demands now and for years to come. For more information call 1.855.ROKABIO or visit us online at www.rokabio.com.

**Romer Labs, Inc.** 302  
1301 Stylemaster Drive  
Union, MO 63084, USA  
Phone: 636.583.8600 Fax: 636.583.6553  
www.romerlabs.com

Romer Labs® is a leading provider of diagnostic test solutions for the Food Industry. We specialize in Analytical Services and Rapid Test Kits for the detection of Food Pathogens, Food Allergens, Drug Residues, Mycotoxins, Melamine and GMO. Our broad range of innovative tests and services play a pivotal role in integrated food safety solutions. Our fundamental objective at Romer Labs® is to provide cost-effective, validated products and services to make the world's food safer.

**rtech laboratories** 810  
P.O. Box 64101  
St. Paul, MN 55164-0101, USA  
Phone: 800.328.9687 Fax: 651.375.2002  
www.rtechlabs.com

rtech laboratories, a division of Land O'Lakes, is a comprehensive food science and technology research facility providing clients with Chemistry, Microbiology, Nutrition Labeling, Pilot Plant and Information Research Services. Our laboratory is ISO 17025 accredited. Although we are experts in dairy analysis, the lab performs a broad range of routing testing as well as specialty assays. Our pilot plant is capable of producing flexible batch runs in many product categories across a broad range of processing conditions. Our information research service is available to all rtech customers and can provide for all your scientific, business or technical information needs.

**SA Scientific Ltd.** 600  
4919 Golden Quail  
San Antonio, TX 78240, USA  
Phone: 210.699.6545 Fax: 210.699.6545  
www.sascientific.com

SA Scientific Ltd. develops and manufactures wide range of quality diagnostic products (Molecular and Immunochromatographic assays) for Human, Veterinary and Food pathogens. Our real-time detection based molecular test kits for common food pathogens include *E. coli* O157, *Salmonella*, Shiga-toxigenic *E. coli* (STEC), *Listeria* and *Campylobacter*. These tests utilize a novel Loop-mediated Isothermal Amplification (LAMP) method, using four different primers to recognize six distinct regions of the target thus making the assay highly specific and sensitive. The test results can be read using a simple, real-time turbidimeter.

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**Safefood 360 Inc.** 621  
90 Park Ave., 17th Floor  
New York, NY 10016, USA  
Phone: 646.360.0210 Fax: 646.397.1901  
www.safefood360.com

Safefood 360 is a young, innovative technology company dedicated to developing and supplying the global food industry with compliance software solutions that work. Our team of practitioners from both the Food and IT industries know the needs of our end users because we worked in these roles. This experience and insight is built into our solutions from day-one making them powerful, intuitive and a pleasure to use. Our food safety management software allows you to easily setup, plan, record and report on all aspects of your system confident in the knowledge that it will meet the requirements of the GFSI, FSMA, retailer standards and regulations.

**SafetyChain Software** 415  
750 Lindero St., Suite 330  
San Rafael, CA 94901, USA  
Phone: 415.233.9483 Fax: 415.294.7588  
www.safetychain.com

SafetyChain Software's SafetyChain for Food™ helps the food and beverage industry manage safety and quality compliance in realtime – preventing non-compliant ingredients, raw materials and finished product from coming in or going out. With SafetyChain for Food's affordable solution modules – for Supplier Compliance & Management, Safety & Quality Data Reporting, HACCP/GFSI Compliance and Customer & Finished Product Compliance – food growers, producers, manufacturers, distributors, retailers, food services and importers save time, save money and create efficiencies that contribute to the bottom line. SafetyChain for Food is a global, Software-as-a-Service solution, designed for fast deployment and even faster ROI. www.safetychain.com

**SAI Global** 324  
2 Summit Park Drive, Suite 245  
Independence, OH 44131, USA  
Phone: 800.465.3717 Fax: 216.654.0889  
www.saiglobal.com/foodsafety/

SAI Global Assurance Services helps you to keep pace with the global trends in food safety, whether they are government mandated, industry schemes, purchasing requirements for retailers, or based on International Standards. SAI Global can train, audit and certify to a number of recognized GFSI Programs including BRC, SQF, FSSC 22000, IFS-PAC secure, Canada GAP and Global GAP, plus verification/assessment programs like GMA-SAFE, HACCP and GMP. With more than 800 auditors and 24,000 registrations worldwide, SAI Global Assurance Services is a global leader in helping advance business excellence for customers committed to exceptional customer service and value.

**Sample6 Technologies, Inc.** 820  
27 Drydock Ave., 2nd Floor  
Boston, MA 02210, USA  
Phone: 617.393.7600 Fax: 617.939.0271  
www.sample6tech.com

Sample6 Technologies is revolutionizing environmental pathogen monitoring by coupling the world's first "enrichment free" diagnostic with a powerful control and analytics system. The company's mission is to improve the health and safety of global consumers by bringing novel technologies to food safety.

**Sealed Air, Corp.** 709  
8310 16th St.  
Sturtevant, WI 53177, USA  
Phone: 262.631.4001  
www.sealedair.com

Sealed Air is the new global leader in food safety and security, facility hygiene and product protection. With widely recognized and inventive brands such as Bubble Wrap® brand cushioning, Cryovac® Brand food packaging solutions and Diversey® brand cleaning and hygiene solutions, Sealed Air offers efficient and sustainable solutions that create business value and enhance the quality of life for customers and provide a cleaner and healthier environment for future generations.

**Sensitech Inc.** 310  
800 Cummings Center, Suite 258X  
Beverly, MA 01915-6197, USA  
Phone: 978.720.2667 Fax: 978.921.2112  
www.sensitech.com

Sensitech® Inc. is a leading provider of supply and cold chain visibility solutions that enable our customers – global leaders in the food, life sciences, and industrial markets – to track, monitor and protect the quality and efficacy of their temperature-sensitive products across complex supply chains. Sensitech Inc. is an ISO 9001:2008 company based in Beverly, Mass., with more than 30 sales, service and distribution locations around the world. Sensitech is a part of UTC Climate, Controls & Security, a unit of United Technologies Corp., a leading provider to the aerospace and building systems industries worldwide. Visit www.sensitech.com for additional information.

**Seward Laboratory Systems** 1021  
574 NW Mercantile Place, Suite 107  
Port Saint Lucie, FL 34986, USA  
Phone: 772.621.8220 Fax: 772.621.8257  
www.sewardusa.com

Seward manufactures the world's leading range of Stomacher® paddle blenders used in sample preparation for microbiological analysis. For accurate results, choose the best in sample preparation.

**Sigma-Aldrich** 115  
3050 Spruce St.  
St. Louis, MO 63103, USA  
Phone: 314.771.5765 Fax: 314.286.7817  
www.sigma-aldrich.com

Sigma-Aldrich delivers high-quality, innovative chromatography and sample prep products and solutions to address all food and beverage testing workflows. Our Supelco and Fluka brands provide a truly unique and broad-based analytical consumables offering that includes many breakthrough technologies, like Ascentis® Express Fused-Core® columns for UHPLC and HPLC, Ionic Liquid GC columns that provide unique selectivity, HybridSPE® to remove or enrich phospholipids, plus new and novel products for sample preparation to aid with SPE, SPME, and QuEChERS cleanup applications. For the latest product and technical information visit: sigma-aldrich.com/supelco.

**Silliker, Inc.** 514  
111 E Wacker Drive, Suite 2300  
Chicago, IL 60601, USA  
Phone: 312.938.5151  
www.silliker.com

Silliker, Inc. provides consulting, testing, auditing, sensory evaluation, research and education services that help assure food safety, quality and nutrition worldwide. With over 40 locations meeting and exceeding ISO 17025 requirements, Silliker is the leading international network of accredited food testing and consulting laboratories and part of the Mérieux NutriSciences Corporation. Working together, we'll help your company assess product

safety, assure quality, guard against contamination and spoilage, verify products and processes, keep your costs under control and empower employees through education programs. Stop by the Silliker booth 514 to learn more about our total solutions approach to food safety, quality and nutrition.

**Society for Applied Microbiology** 127  
**Bedford Heights**  
**Brickhill Drive**  
**Bedford, MK41 7PH, United Kingdom**  
**Phone: 44.1234.326661**  
**www.sfam.org.uk**

The Society for Applied Microbiology was founded in 1931. It is based in the United Kingdom but has members in over 80 countries. There are many categories of members and numerous benefits of membership. Membership offers very good value for money. Please stop by the stand to receive further information.

**Springer** 301  
**233 Spring St., 6th Floor**  
**New York, NY 10013, USA**  
**Phone: 212.460.1600** **Fax: 201.345.4505**  
**www.springer.com**

Get hands-on experience with Springer's multi-format publishing model: print – eBook – MyCopy (printed eBooks for US\$ 24.95). Our mission is to support your research. Come browse our books in your preferred format: print, online, or on an iPad. Get Read. Publish With Springer.

**STOP Foodborne Illness** 912  
**3759 N. Ravenswood Ave., Suite #224**  
**Chicago, IL 60613, USA**  
**Phone: 773.269.6555** **Fax: 773.883.3098**  
**www.STOPfoodborneillness.org**

STOP Foodborne Illness is a national non-profit, public health organization dedicated to the prevention of illness and death from foodborne pathogens by: (1) advocating for sound public policy, (2) building public awareness, and (3) assisting those impacted by foodborne illnesses.

**Synbiosis** 320  
**5108 Pegasus Court, Suite M**  
**Frederick, MD 21704, USA**  
**Phone: 301.662.2863** **Fax: 301.631.3977**  
**www.synbiosis.com**

Synbiosis is a world leading supplier of manual, semi-automated and automated colony counters and zone measurement systems that are guaranteed to improve the productivity and accuracy of microbiological applications, such as food monitoring, pharmaceutical manufacturing, environmental monitoring, clinical microbiology and molecular microbiology.

**TandD US, LLC** 826  
**P.O. Box 321**  
**Saratoga Springs, NY 12866, USA**  
**Phone: 518.669.9227**  
**www.tandd.com**

**Thermo Scientific** 508  
**12076 Santa Fe Trail Drive**  
**Lenexa, KS 66215-3594, USA**  
**Phone: 800.255.6730** **Fax: 800.864.4739**  
**www.remel.com**

The Thermo Scientific™ microbiology portfolio offers an extensive range of products for enrichment, isolation and identification of foodborne pathogens. Visit our booth to check out the NEW Thermo Scientific™ SureTect™ Real-Time PCR System designed to quickly and accurately detect microorganisms in a broad range of foods and associated samples.

**US Pharmacopeia** 1017  
**12601 Twinbrook Pkwy.**  
**Rockville, MD 20852, USA**  
**Phone: 301.816.8559**  
**www.usp.org**

The United States Pharmacopeial Convention (USP) is a nonprofit standards-setting organization that offers quality standards and programs to support the manufacture and testing of food ingredients and dietary supplements. Our products and services include:

- Documentary standards in the Food Chemicals Codex, Eighth Edition, and the 2012 Dietary Supplements Compendium
- More than 150 reference materials for food ingredients and over 200 for dietary supplements
- Free access to information on adulterated foods in the new USP Food Fraud Database
- USP Verification Programs for dietary supplement ingredients and finished products

Learn more at [www.usp.org](http://www.usp.org)

**USDA-NIFA Food Virology Collaborative** 322  
**1017 Main Campus Drive, Suite 1500**  
**Raleigh, NC 27606, USA**  
**Phone: 919.515.1222** **Fax: 919.515.3023**  
**www.norocore.ncsu.edu**

The USDA-NIFA Food Virology Collaborative, or NoroCORE, is a food safety initiative that focuses on outreach, research, and education in the field of food virology. NoroCORE's ultimate goal is to reduce the burden of food borne disease associated with viruses, particularly norovirus. NoroCORE is a large, multi-disciplinary team of researchers, with numerous stakeholders from industry, academia, and the government. We are working in an integrated manner to develop improved tools, skills, and capacity to understand and control food borne virus risks. NoroCORE's not just about research—it includes extensive outreach and education components.

**VAN HEES Inc.** 123  
**2500 Regency Pkwy.**  
**Cary, NC 27518, USA**  
**Phone: 919.654.6862** **Fax: 919.654.6864**  
**www.vanheesinc.com**

VAN HEES is a premier manufacturer of functional ingredients tailored specifically to the meat industry. Our branded functional ingredients provide high quality results in beef, pork, poultry and emulsified products.

**Vigilistics** 1011  
**14 Bunsen**  
**Irvine, CA 92618, USA**  
**Phone: 949.900.8380** **Fax: 949.727.4480**

Vigilistics is a leader in providing enterprise intelligence solutions that deliver actionable, real-time intelligence to operations, plant, and executive management. We help our customers efficiently achieve and maintain compliance with food safety and traceability requirements, while reducing product loss, energy consumption, utilities, chemicals, and wastewater.

Vigilistics Intelligence Software (VIS) is offered as one or more special purpose modules that configure to the plant floor, kitchen or portable cleaning unit. VIS collects, analyzes, and records real time data allowing customers to implement repeatable and scalable solutions across an enterprise to achieve their performance, sustainability, and compliance goals.

**Visitor Pass Solutions, by Data Management, Inc.** 1020  
**537 New Britain Ave.**  
**Farmington, CT 06034, USA**  
**Phone: 800.243.1969** **Fax: 800.428.1951**  
**www.VisitorPassSolutions.com**

Visitor Pass Solutions, by Data Management, Inc. produces The Visitor Pass Registry Book, which allows a visitor to sign in to your facility while maintaining a confidential log and duplicate record. The badges are available

for both manual and electronic visitor management systems; with expiring or non-expiring features. FULL-expiring Visitor Passes produce an expiring image that covers the entire pass for maximum visibility, or TAB-expiring Visitor Passes that employ a patented one-piece activation, a process that saves time. Visitor Pass Solutions are trusted by schools, hospitals, businesses, and governments nationwide and internationally.

**Vivione Biosciences** 1027  
34-161 Hoadley Road  
Pine Bluff, AR 71602-9500, USA  
Phone: 408.981.3505  
www.vivionebiosciences.com

Vivione Biosciences is commercially releasing a new diagnostic platform called RAPID-B with single cell pathogen detection with speed capabilities that allow near line monitoring. RAPID-B finally gives customers a microbiological management tool that addresses the ever increasing quality requirements from regulators and customers. This RAPID-B technology was co-developed with the FDA NCTR and achieves this high level of analytical performance due to its very unique multidimensional approach. It has a suite of food and industrial assays that are currently available. Come see us at our booth for more details.

**Volta Belting Technology** 724  
11 Chapin Road  
Pine Brook, NJ 07058, USA  
Phone: 973.276.7905 Fax: 973.279.7908  
www.voltabelting.com

Volta Belting Technology is the world-leading manufacturer of Thermoplastic Conveyor Belting and has the broadest product range in the industry of flat, vee and round, and positive drive style belting for the food industry. Volta's latest innovation, its positive drive product range, which includes Superdrive, Dual Drive and DDSF offers solutions for conveying and meets the strictest hygiene requirements. In addition, Volta's positive drive belting ensures efficiency and reduction in costs associated with production and sanitation. Volta Belting products are USDA/FDA/3A Dairy certified.

**Weber Scientific** 713  
2732 Kuser Road  
Hamilton, NJ 08691, USA  
Phone: 800.328.8378 Fax: 609.584.8388  
www.weberscientific.com

Pick up a copy of our brand new 2013-2014 lab sourcebook focused on products for food and dairy testing. On display are simple and rapid methods, including Colilert® a rapid test for total coliform and *E. coli* in water (the most popular test on the planet and for good reason), our popular buffered pre-filled dilution bottle (DB™), PDX-LIB & PDX-SIB Environmental *Listeria* & *Salmonella* Rapid Food Contact Surface tests and several innovative products for environmental and hygiene monitoring such as EnSURE multiparameter luminometer™, PRO-Clean™ and Solar Cult® Sponge Handle Sampling System Serving QC professionals since 1959.

**WHIRL-PAK** 214  
901 Janesville Ave.  
Fort Atkinson, WI 53538, USA  
Phone: 920.568.5536 Fax: 920.568.5736  
www.whirl-pak.com

Manufacturer of WHIRL-PAK® sterile laboratory sample bags for transporting samples for QA testing, product analysis, and other laboratory applications. +1 Sterilization using ethylene oxide gas is completed after manufacturing to insure sterility with documentation available at www.whirl-pak.com. All bags contain Puncture Proof Tabs made by a patented process that covers the wire ends with PVC tape to minimize puncture, and damage to skin and gloves. New bags include a 15" x 15" write-on and a 15" x 15" stand-up. WHIRL-PAK® bags (with a few exceptions) are manufactured under a quality management system certified to ISO 9001.

**WTI Inc.** 501  
281 MLK Ave.  
Jefferson, GA 30549, USA  
Phone: 800.827.1727 Fax: 706.387.5159  
www.wtiinc.com

For over 30 years, WTI has led and continues to be the most trusted and innovative ingredients source in the business. WTI produces functional ingredients that help food processors improve their products by inhibiting pathogens, extending product shelf-life, reducing sodium content, enhancing product flavor, maintaining yields and improving product quality – tenderness, flavor, slice-ability, and color. WTI has the ingredients, the expertise, the knowledge, the equipment, and above all, the passion, to make a perfect product. See what WTI can offer your poultry, red meat and further processed products.

**Zep Sales & Service** 227  
1310 Seaboard Ind. Blvd.  
Atlanta, GA 30318 USA  
Phone: 877.428.9937  
www.zepfooddivision.com

Zep has been a true partner in food safety sanitation for more than 70 years. Our alignment with customers and key industry stakeholders allows us to keep pace with the changing technologies, regulations and best practices impacting our industry. The Zep Food Division offers the right sanitation products for every application. Our solutions include Foaming Cleaners, CIP/Soak Cleaners, Sanitizers, Drain Maintenance, Biofilm, and Hand Care. Zep delivers next generation food antimicrobial interventions through cutting-edge CIO2 technology. Zep Inc is a licensed distributor of KEEPER® from Bio-Cide International and SGE™ CIO2 Z-Series™ Coil Cleaners and FRUITGARD® from ICA TriNova, LLC.

## One-Day Workshops

### Friday: Food Defense

The risk of intentional contamination of the food supply requires predetermined emergency preparedness. Subject matter experts in food defense from industry and government will provide global perspectives, lessons learned, and tools available to address these challenging threats. The workshop will include three one-hour scenario-based exercises demonstrating how to identify the seams, gaps, and shortfalls in emergency response plans and food supply chains. The three sessions include: (1) Amber Fields, (2) Harvest Haul, and (3) Market Bounty. Participants will receive materials that describe the exercise scenarios, methodology for evaluating plans, and outcomes of the workshop exercises.

### Saturday: Developing Environmental Monitoring Programs for Small and Midsize Processors

Small and midsize produce, spice, seafood, condiment, bakery, and ingredient suppliers will receive practical tools to begin or improve environmental monitoring programs. Workshop content includes regulatory perspectives, customer expectations, characteristics of microbial and chemical contaminants, analytical methods for finding spoilage microbes, pathogenic microbes, and allergens, data interpretation, source tracking, and remedial sanitation practices. A practical breakout session will focus on how to collect samples, tools for collection, and sample handling. The workshop will conclude with a case study. A workbook with workshop content, EMP guides, and reference materials will be provided.

## Two-Day Workshops

### Friday and Saturday: Better Process Cheese School

Shelf-stable pasteurized process cheese products are considered by FDA as low-acid canned foods. Therefore, these producers must have at least one operator that has completed an FDA-approved course. The Better Process Cheese School is designed to cover LACF regulations as they pertain to shelf-stable process cheese manufacturers. Topics include microbiology and control of *Clostridium botulinum*, thermal processing/pasteurization, formulation control, process instrumentation, HACCP, production and packaging controls, and records. Exams will be given at the completion of each section. Satisfactory completion of this course and passage of all exams will fulfill FDA's recommendations for certification to be a trained operator.

### Friday and Saturday: Statistical Process Improvement of the Microbiology of Food

Statistical process control has a long history in manufacturing industries, but there has been little uptake of these methods in the food industry, especially in relation to microbiology quality and safety.

Participants will learn about statistical approaches for monitoring and controlling microbial hazards and improving quality and hygiene. These methods are also equally applicable to other measurable aspects of the food product as well as in a laboratory setting where quality of microbiological and chemical testing outcomes must be ensured.

The course consists of a series of lectures and practical exercises using food microbiology examples to illustrate the concepts and application.

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# IAFP 2014 CALL FOR SUBMISSIONS

## Submission Deadlines:

October 15, 2013 – Symposium, Roundtable and Workshop Submissions

January 21, 2014 – Technical and Poster Abstract Submissions

Questions regarding submissions can be directed to Terri Huffman  
+1 515.276.3344 or +1 800.369.6337  
E-mail: [thuffman@foodprotection.org](mailto:thuffman@foodprotection.org)

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DETECTION OF DRUG RESIDUES AND CONTAMINANTS

MICROBIOLOGY AND CHEMISTRY TESTS FOR FOOD,  
CLINICAL AND ANIMAL APPLICATIONS

# Policy on Commercialism for Annual Meeting Presentations

## I. INTRODUCTION

No printed media, technical sessions, symposia, posters, seminars, short courses, and/or other related types of forums and discussions offered under the auspices of the International Association for Food Protection (hereafter referred to as to Association forums) are to be used as platforms for commercial sales or presentations by authors and/or presenters (hereafter referred to as authors) without the express permission of the staff or Executive Board. The Association enforces this policy in order to restrict commercialism in technical manuscripts, graphics, oral presentations, poster presentations, panel discussions, symposia papers, and all other type submissions and presentations (hereafter referred to as submissions and presentations), so that scientific merit is not diluted by proprietary secrecy.

Excessive use of brand names, product names or logos, failure to substantiate performance claims, and failure to objectively discuss alternative methods, processes, and equipment are indicators of sales pitches. Restricting commercialism benefits both the authors and recipients of submissions and presentations.

This policy has been written to serve as the basis for identifying commercialism in submissions and presentations prepared for the Association forums.

## 2. TECHNICAL CONTENT OF SUBMISSIONS AND PRESENTATIONS

### 2.1 Original Work

The presentation of new technical information is to be encouraged. In addition to the commercialism evaluation, all submissions and presentations will be individually evaluated by the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convenor, and/or staff on the basis of originality before inclusion in the program.

### 2.2 Substantiating Data

Submissions and presentations should present technical conclusions derived from technical data. If products or services are described, all reported capabilities, features or benefits, and performance parameters must be substantiated by data or by an acceptable explanation as to why the data are unavailable (e.g., incomplete, not collected, etc.) and, if it will become available, when. The explanation for unavailable data will be considered by the Program Committee chairperson and/or technical

reviewers selected by the Program Committee chairperson to ascertain if the presentation is acceptable without the data. Serious consideration should be given to withholding submissions and presentations until the data are available, as only those conclusions that might be reasonably drawn from the data may be presented. Claims of benefit and/or technical conclusions not supported by the presented data are prohibited.

### 2.3 Trade Names

Excessive use of brand names, product names, trade names, and/or trademarks is forbidden. A general guideline is to use proprietary names once and thereafter to use generic descriptors or neutral designations. Where this would make the submission or presentation significantly more difficult to understand, the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convenor, and/or staff, will judge whether the use of trade names, etc., is necessary and acceptable.

### 2.4 “Industry Practice” Statements

It may be useful to report the extent of application of technologies, products, or services; however, such statements should review the extent of application of all generically similar technologies, products, or services in the field. Specific commercial installations may be cited to the extent that their data are discussed in the submission or presentation.

### 2.5 Ranking

Although general comparisons of products and services are prohibited, specific generic comparisons that are substantiated by the reported data are allowed.

### 2.6 Proprietary Information (See also 2.2.)

Some information about products or services may not be publishable because it is proprietary to the author’s agency or company or to the user. However, the scientific principles and validation of performance parameters must be described for such products or services. Conclusions and/or comparisons may be made only on the basis of reported data.

### 2.7 Capabilities

Discussion of corporate capabilities or experiences are prohibited unless they pertain to the specific presented data.

### **3. GRAPHICS**

#### **3.1 Purpose**

Slides, photographs, videos, illustrations, art work, and any other type visual aids appearing with the printed text in submissions or used in presentations (hereafter referred to as graphics) should be included only to clarify technical points. Graphics which primarily promote a product or service will not be allowed. (See also 4.6.)

#### **3.2 Source**

Graphics should relate specifically to the technical presentation. General graphics regularly shown in, or intended for, sales presentations cannot be used.

#### **3.3 Company Identification**

Names or logos of agencies or companies supplying goods or services must not be the focal point of the slide. Names or logos may be shown on each slide so long as they are not distracting from the overall presentation.

#### **3.4 Copies**

Graphics that are not included in the preprint may be shown during the presentation only if they have been reviewed in advance by the Program Committee chairperson, session convenor, and/or staff, and have been determined to comply with this policy. Copies of these additional graphics must be available from the author on request by individual attendees. It is the responsibility of the session convenor to verify that all graphics to be shown have been cleared by Program Committee chairperson, session convenor, staff, or other reviewers designated by the Program Committee chairperson.

### **4. INTERPRETATION AND ENFORCEMENT**

#### **4.1 Distribution**

This policy will be sent to all authors of submissions and presentations in the Association forums.

#### **4.2 Assessment Process**

Reviewers of submissions and presentations will accept only those that comply with this policy. Drafts of submissions and presentations will be reviewed for commercialism concurrently by both staff and technical reviewers selected by the Program Committee chairperson. All reviewer comments shall be sent to and coordinated by either the Program Committee chairperson or the designated staff. If any submissions are found to violate this policy, authors will be informed and invited to resubmit their materials in revised form before the designated deadline.

#### **4.3 Author Awareness**

In addition to receiving a printed copy of this policy, all authors presenting in a forum will be reminded of this policy by the Program Committee chairperson, their session convenor, or the staff, whichever is appropriate.

#### **4.4 Monitoring**

Session convenors are responsible for ensuring that presentations comply with this policy. If it is determined by the session convenor that a violation or violations have occurred or are occurring, he or she will publicly request that the author immediately discontinue any and all presentations (oral, visual, audio, etc.) and will notify the Program Committee chairperson and staff of the action taken.

#### **4.5 Enforcement**

While technical reviewers, session convenors, and/or staff may all check submissions and presentations for commercialism, ultimately it is the responsibility of the Program Committee chairperson to enforce this policy through the session convenors and staff.

#### **4.6 Penalties**

If the author of a submission or presentation violates this policy, the Program Committee chairperson will notify the author and the author's agency or company of the violation in writing. If an additional violation or violations occur after a written warning has been issued to an author and his agency or company, the Association reserves the right to ban the author and the author's agency or company from making presentations in the Association forums for a period of up to two (2) years following the violation or violations.

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1921 – C. L. Roadhouse	1953 – Harold J. Barnum	1985 – Archie Holliday
1922 – Herbert E. Bowman	1954 – John D. Faulkner	1986 – Sid Barnard
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1925 – Thomas J. Strauch	1957 – Paul Corash	1989 – Robert Gravani
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1937 – John C. Hardenbergh	1969 – Samuel O. Noles	2001 – Jenny Scott
1938 – Alexander R. Tolland	1970 – Milton E. Held	2002 – James S. Dickson
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1942 – Frederick W. Fabian	1974 – Earl O. Wright	2006 – Jeffrey M. Farber
1943 – Charles A. Abele	1975 – P. J. Skulborstad	2007 – Frank Yiannas
		2008 – Gary R. Acuff
		2009 – J. Stan Bailey
		2010 – Vickie Lewandowski
		2011 – Lee-Ann Jaykus
		2012 – Isabel Walls

# PAST ANNUAL MEETINGS AND LOCATIONS

1912	Milwaukee, WI	1962	Philadelphia, PA
1913	Chicago, IL	1963	Toronto, Ontario
1914	Chicago, IL	1964	Portland, OR
1915	Washington, D.C.	1965	Hartford, CT
1916	Springfield, MA	1966	Minneapolis, MN
1917	Washington, D.C.	1967	Miami Beach, FL
1918	Chicago, IL	1968	St. Louis, MO
1919	New York, NY	1969	Louisville, KY
1920	Chicago, IL	1970	Cedar Rapids, IA
1921	New York, NY	1971	San Diego, CA
1922	St. Paul, MN	1972	Milwaukee, WI
1923	Washington, D.C.	1973	Rochester, NY
1924	Detroit, MI	1974	St. Petersburg, FL
1925	Indianapolis, IN	1975	Toronto, Ontario
1926	Philadelphia, PA	1976	Arlington Heights, IL
1927	Toronto, Ontario	1977	Sioux City, IA
1928	Chicago, IL	1978	Kansas City, MO
1929	Memphis, TN	1979	Orlando, FL
1930	Cleveland, OH	1980	Milwaukee, WI
1931	Montreal, Quebec	1981	Spokane, WA
1932	Detroit, MI	1982	Louisville, KY
1933	Indianapolis, IN	1983	St. Louis, MO
1934	Boston, MA	1984	Edmonton, Alberta
1935	Milwaukee, WI	1985	Nashville, TN
1936	Atlantic City, NJ	1986	Minneapolis, MN
1937	Louisville, KY	1987	Anaheim, CA
1938	Cleveland, OH	1988	Tampa, FL
1939	Jacksonville, FL	1989	Kansas City, MO
1940	New York, NY	1990	Arlington Heights, IL
1941	Tulsa, OK	1991	Louisville, KY
1942	St. Louis, MO	1992	Toronto, Ontario
1943	Cancelled	1993	Atlanta, GA
1944	Chicago, IL	1994	San Antonio, TX
1945	Cancelled	1995	Pittsburgh, PA
1946	Atlantic City, NJ	1996	Seattle, WA
1947	Milwaukee, WI	1997	Orlando, FL
1948	Philadelphia, PA	1998	Nashville, TN
1949	Columbus, OH	1999	Dearborn, MI
1950	Atlantic City, NJ	2000	Atlanta, GA
1951	Glenwood Springs, CO	2001	Minneapolis, MN
1952	Milwaukee, WI	2002	San Diego, CA
1953	East Lansing, MI	2003	New Orleans, LA
1954	Atlantic City, NJ	2004	Phoenix, AZ
1955	Augusta, GA	2005	Baltimore, MD
1956	Seattle, WA	2006	Calgary, Alberta
1957	Louisville, KY	2007	Lake Buena Vista, FL
1958	New York, NY	2008	Columbus, OH
1959	Glenwood Springs, CO	2009	Grapevine, TX
1960	Chicago, IL	2010	Anaheim, CA
1961	Des Moines, IA	2011	Milwaukee, WI
		2012	Providence, RI

## Future Annual Meetings

August 3–6, 2014  
 Sunday – Wednesday  
 Indiana Convention Center  
 Indianapolis, Indiana

July 25–28, 2015  
 Saturday – Tuesday  
 Oregon Convention Center  
 Portland, Oregon

July 31 – August 3, 2016  
 Sunday – Wednesday  
 America's Center  
 St. Louis, Missouri

# AUTHORS AND PRESENTERS

- Aarts, Henk, RIVM - Centre for Infectious Disease Control (T11-03)  
Abbott, Jason, U.S. Food and Drug Administration (T10-05)  
Abeyandara, Piumi, Mississippi State University (P1-12\*)  
Abiad, Mohamad, American University of Beirut (P1-124)  
Abley, Melanie, U.S. Department of Agriculture-ARS-BEAR (T3-06\*)  
Abraham, Shibu, FMC Corporation (P2-144)  
Accumanno, Gina, Delaware State University (P1-163\*)  
Acheson, David, Leavitt Partners (RT3\*, Ivan Parkin Lecture)  
Acuff, Gary, Texas A&M University (RT9\*, RT7\*, RT8\*)  
Adams, Mary Paige, University of Georgia (P1-112, P3-125)  
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Afolayan, Olamide, University of Georgia (T4-10\*)  
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Agius, Louise, University of Guelph (T3-05\*)  
Aguilar-Alonso, Patricia, Benemerita Universidad Autonoma de Puebla (P2-133)  
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Al-Sakkaf, Ali, LBRL Food Safety Consultants (T7-03\*)  
Alali, Walid, University of Georgia (T1-07\*, T1-04, S14\*, P2-151)  
Aldoory, Linda, University of Maryland-College Park (S24\*)  
Aldrete-Tapia, Alejandro, Universidad Autónoma de Querétaro (T7-11\*)  
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Allen, Ann-Christine, Romer Lab Technologies, Inc. (P2-33)  
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Allen, Kevin, University of British Columbia (P1-111, T8-10, P3-127)  
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Aydin, Muhsin, Arkansas State University (T4-02\*)  
Ayers, Sherry, U.S. Food and Drug Administration (T10-05)  
Babu, Dinesh, University of Louisiana (P1-165, P2-138)  
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Badrie, Neela, University of the West Indies (S22\*)  
Baert, Leen, Ghent University (P1-09, T5-07)  
Baguet, Justine, ADRIA (P3-69)  
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\*Presenter

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Balakireva, Larissa, NovoCIB (T4-11)  
Balamurugan, S., Agriculture and Agri-Food Canada (T3-05)  
Balasubramaniam, Bala, The Ohio State University (P1-104)  
Balcomb, Christie, North Carolina State University (P1-131)  
Ball, Melanie, RTI International (P1-92)  
Ballesté, Elisenda, University of Barcelona (P2-58)  
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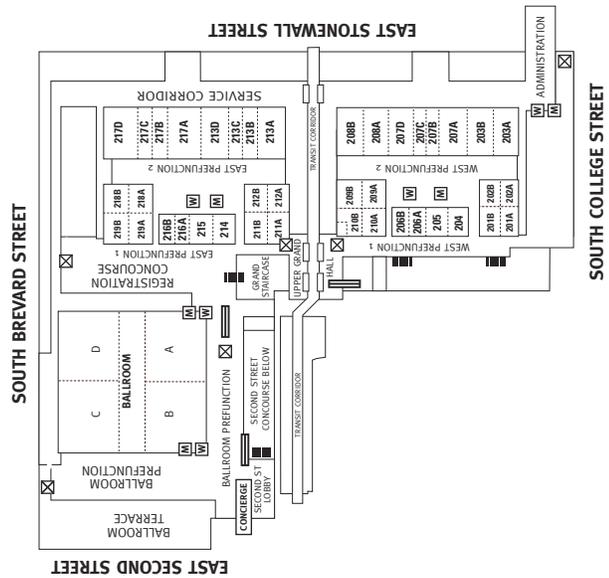
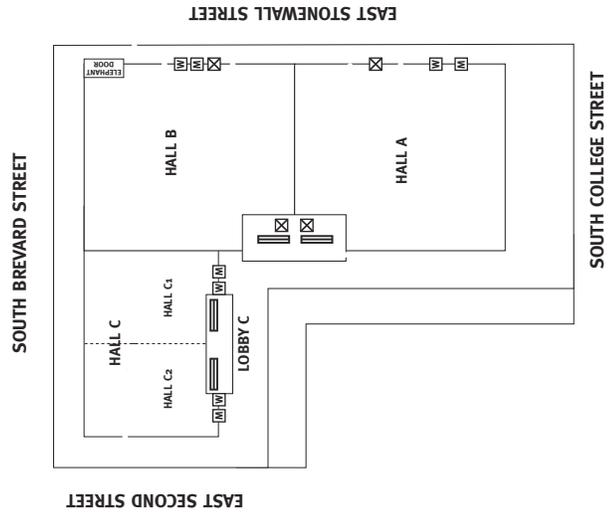
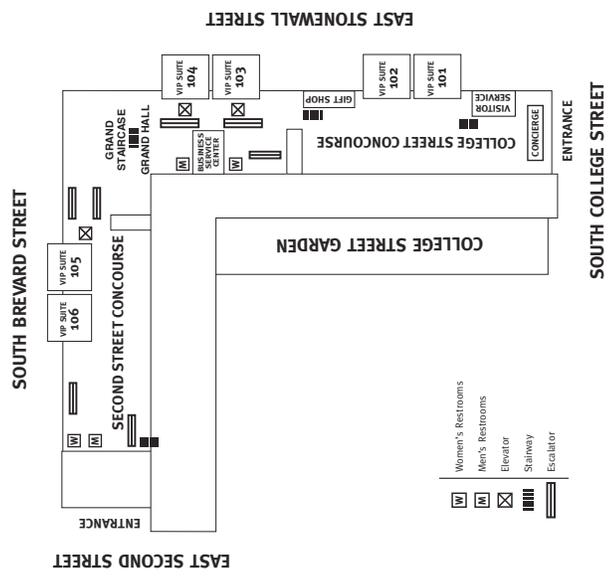
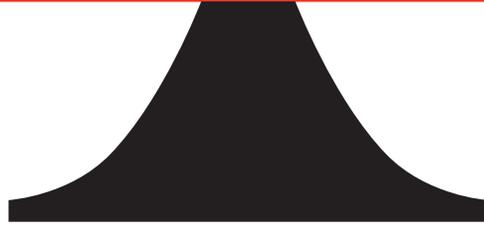
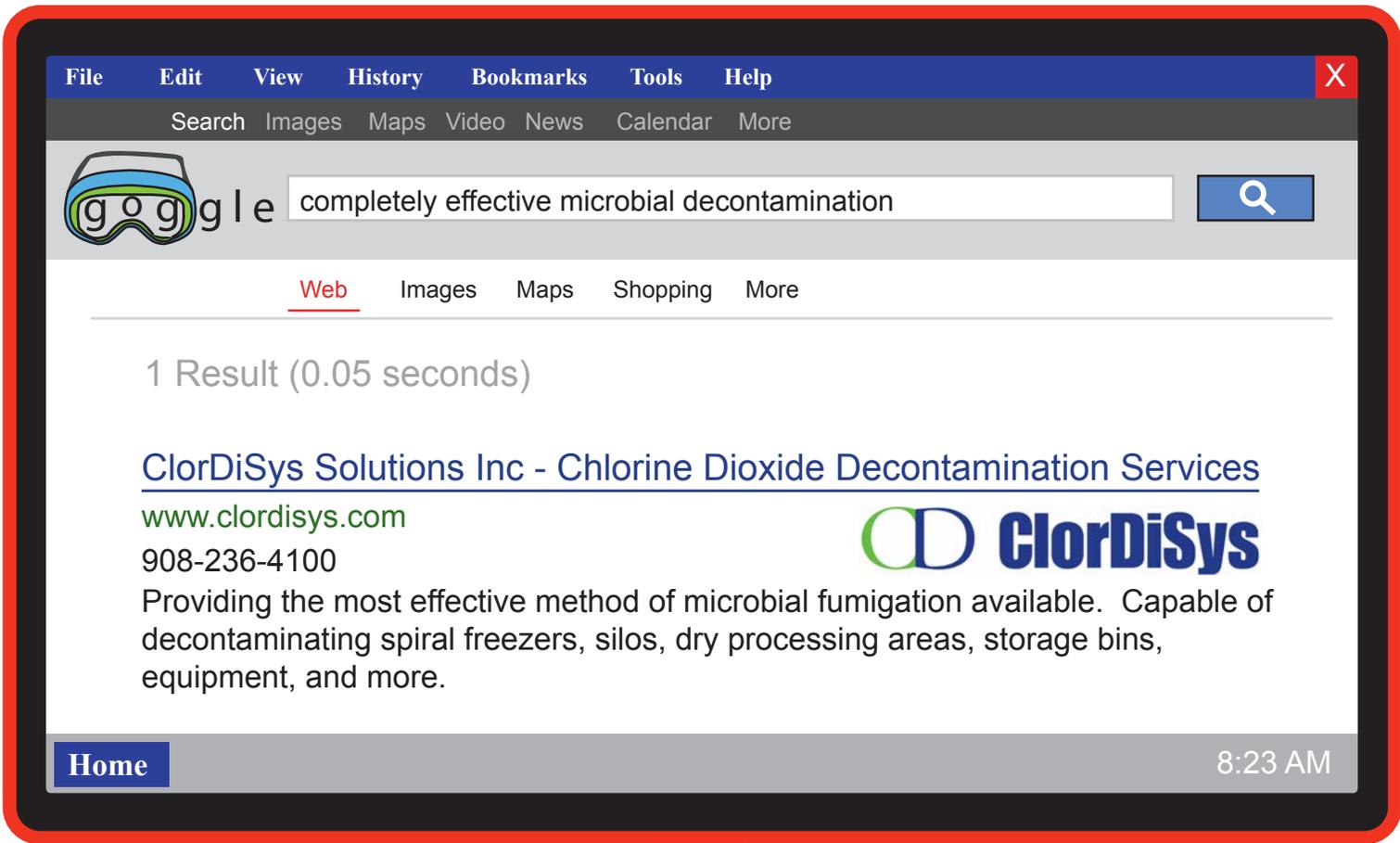


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