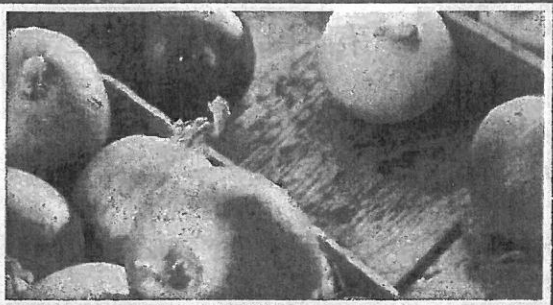
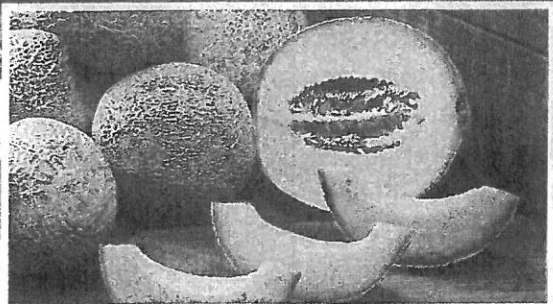


# CPS Research Symposium 2017



Hyatt Regency Denver Tech Center  
Denver, Colorado  
June 20-21, 2017

**cps** CENTER *for* PRODUCE SAFETY

[www.centerforproducesafety.org](http://www.centerforproducesafety.org)

# Agenda at a Glance

Tuesday, June 20, 2017

7:00 am – 8:00 am

**Registration, Continental Breakfast, Poster Session**

8:00 am – 8:05 am

**Opening Comments**

**Tim York**, Chair, CPS Board of Directors

8:05 am – 9:35 am

**Agricultural Water**

The safety of agricultural water has been an industry priority for over a decade. This session will focus on four CPS funded research programs to help stakeholders better understand the factors involved in sourcing, sampling, testing and treating specific types of agricultural water.

- Identification of novel indicator organisms to determine the risks of fecal contamination of irrigation waters. **Kelly Bright**, University of Arizona
- Microbial food safety risks of reusing tail water for leafy greens production. **Michael Cahn**, University of California, Cooperative Extension
- Demonstration of practical, effective and environmentally sustainable agricultural water treatments to achieve compliance with microbiological criteria. **Ana Allende**, CEBAS-CSIC, Spain
- Improved sampling and analytical methods for testing agricultural water for pathogens, surrogates and source tracking indicators. **Vincent Hill**, Centers for Disease Control and Prevention

**Moderator:** **James Gorny**, Produce Marketing Association

**Panelists:** **Samir Assar**, U.S. Food and Drug Administration  
**DeAnn Davis**, Earthbound Farm  
**Walter Ram**, Giumarra Companies

9:35 am – 9:50 am

**Welcome to Colorado**

**The Honorable John Hickenlooper**, Governor of the State of Colorado

9:50 am – 10:20 am

**Break**

10:20 am – 11:05 am

**Stakeholder Value Session – Growers**

**Moderators:** **Drew McDonald**, Taylor Farms  
**Bob Whitaker**, Produce Marketing Association

**Panelists:** **Samir Assar**, U.S. Food and Drug Administration  
**Sharan Lanini**, Pacific International Marketing  
**Robert Sakata**, Sakata Farms

# Agenda at a Glance

11:05 am – 11:50 am

## **FSMA Methods for Testing Agricultural Water – a CPS Colloquium**

The Produce Safety Rule requires a water testing method that has not been traditionally used by the fresh produce industry or their laboratories for testing agricultural water. This session will report on the findings of a panel of regulators, public scientists and industry representatives convened by CPS in a recent Colloquium designed to offer recommendations to both FDA and industry that would address concerns with the FDA prescribed method.

**Moderators:** **Hank Giclas**, Western Growers  
**Trevor Suslow**, University of California, Davis

11:50 am – 12:20 pm

## **Lightning Sessions**

A view of things to come: these lightning sessions will explore exciting new pathogen testing technologies, an emerging class of pathogen indicators, and touch on the phenomena of viable but nonculturable bacteria and why they may or may not be an important food safety consideration.

- Significance of the dormant state in the persistence, interaction with growing plants and virulence of Shiga toxin-producing *Escherichia coli*. **Keith Warriner**, University of Guelph
- Detection, validation, and assessment of risks implied by the viable but nonculturable (VNBC) state of enteric bacterial pathogens in fresh produce. **Xiaonan Lu**, University of British Columbia
- Enteric viruses as new indicators of human and cattle fecal contamination of irrigation waters. **Kelly Bright**, University of Arizona
- Rapid bacterial testing for on-farm sampling. **Sam Nugen**, Cornell University
- Developing cross-assembly phage as a viral indicator for irrigation waters. **Kyle Bibby**, University of Pittsburgh

**Moderator:** **Jill Dunlop**, Florida Fruit and Vegetable Association

12:20 pm – 1:35 pm

## **Lunch**

1:35 pm – 3:05 pm

## **Packinghouse/Supply Chain Food Safety**

The ongoing debate on the application of food safety regulations to packinghouses has simultaneously fueled the need to expand our knowledge base on pathogen transference and wash water control in these environments. This session will focus on these areas and highlight key findings in supply chain-wide management of contamination risks.

- Factors that influence the introduction, fate and mitigation of foodborne pathogens on mangoes throughout the production chain. **Michelle Danyluk**, University of Florida
- Impact of wash water disinfectants on *Salmonella enterica* transfer and

# Agenda at a Glance

	<p>survival in mango packing facility water tank operations. <b>Mary Anne Amalaradjou</b>, University of Connecticut</p> <ul style="list-style-type: none"> <li>Control of cross-contamination during field-pack and retail handling of cantaloupe. <b>Laura Strawn</b>, Virginia Tech</li> <li>Validation of chlorine level in sanitation systems to avoid cross-contamination. <b>Qin Wang</b>, University of Maryland</li> </ul> <p><b>Moderator:</b> <b>Joan Rosen</b>, JC Rosen Resources</p> <p><b>Panelists:</b> <b>Bill Gerlach</b>, Melissa's Produce  <b>Manuel Michel</b>, National Mango Board  <b>Max Teplitski</b>, National Institute of Food and Agriculture, USDA</p>
3:05 pm – 3:35 pm	<b>Break</b>
3:35 pm – 4:20 pm	<p><b>Stakeholder Value Session – Packing</b></p> <p><b>Moderators:</b> <b>Drew McDonald</b>, Taylor Farms  <b>Bob Whitaker</b>, Produce Marketing Association</p> <p><b>Panelists:</b> <b>Tony DiMare</b>, DiMare Fresh  <b>Steve Kenfield</b>, HMC Farms  <b>Robert Kershaw</b>, Domex Superfresh Growers</p>
4:20 pm – 4:40 pm	<p><b>Lightning Round – CPS Funded Research Projects</b></p> <ul style="list-style-type: none"> <li>Characterization and mitigation of bacteriological risks associated with packing fresh-market citrus. <b>Linda Harris</b>, University of California, Davis</li> <li>Evaluation of sanitizing treatments for sizer carriers in stone fruit packinghouses. <b>Steven Pao</b>, California State University, Fresno</li> <li>Control of <i>Listeria monocytogenes</i> on apple through spray manifold–applied antimicrobial intervention. <b>Meijun Zhu</b>, Washington State University</li> <li><i>Listeria monocytogenes</i> growth and survival on peaches and nectarines as influenced by stone fruit packinghouse operation, storage and transportation conditions. <b>Mary Anne Amalaradjou</b>, University of Connecticut</li> </ul> <p><b>Moderator:</b> <b>Stacy Stoltenberg</b>, Hygiena</p>
4:40 pm – 5:00 pm	<p><b>Closing Comments, Day 1</b>  <b>Bonnie Fernandez-Fenaroli</b>, Center for Produce Safety</p>
5:00 pm – 6:30 pm	<b>Official Symposium Reception</b>



# Agenda at a Glance

Wednesday, June 21, 2017

7:00 am – 8:00 am

## Registration, Continental Breakfast, Poster Session

8:00 am – 8:20 am

### Welcome Back

**Michael Hirakata**, Hirakata Farms

**Robert Sakata**, Sakata Farms

8:20 am – 9:50 am

### Validation

One of the hallmarks of the final FSMA regulations is the need to validate key processes or practices employed to manage food safety hazards. Effective validation requires basic knowledge regarding the survivability and persistence of human pathogens and likely the use of surrogates that permit evaluations under actual industry conditions. This session will help stakeholders develop insight into the development of surrogate strains and how they can be used across the production spectrum.

- Comparative genomics analysis and physiological assessment of the avirulent *Salmonella* surrogate relevant to food safety. **Julie Meyer**, University of Florida
- Establishing die-off rates of surrogate and virulent EHEC/STEC strains from strawberry and cilantro surfaces: time, inoculum dose and chemical intervention. **Eduardo Gutierrez-Rodriguez**, North Carolina State University
- Validating a physically heat-treated process for poultry litter in industry settings using the avirulent *Salmonella* surrogates or indicator microorganisms. **Xiuping Jiang**, Clemson University
- Improving pasteurization validation methods for pistachio processing. **Bradley Marks**, Michigan State University

**Moderator:** **James Brennan**, SmartWash Solutions

**Panelists:** **Kent Kise**, Ready Pac  
**Martha Roberts**, Roberts Associates  
**Felice Arboisiere**, Yum Brands

9:50 am – 10:10 am

### Travel Grant Awards

**Moderator:** **Doug Grant**, The Oppenheimer Group

10:10 am – 10:40 am

### Break

10:40 am – 11:25 am

### Stakeholder Value Session – Processing

**Moderators:** **Drew McDonald**, Taylor Farms  
**Bob Whitaker**, Produce Marketing Association

**Panelists:** **Suresh DeCosta**, Lipman Produce

# Agenda at a Glance

**Carter McEntire**, McEntire Produce  
**Brian Zomorodi**, Apio, Inc.

11:25 am – 11:45 am

## Lightning Round

- *Cyclospora*: Potential reservoirs and occurrence in irrigation waters. **Gerardo Lopez**, University of Arizona
- Establishment of operating standards for produce wash systems through the identification of specific metrics and test methods. **Ana Allende**, CEBAS-CSIC, Spain
- Resolving postharvest harborage sites of *Listeria* protects zone 1 surfaces. **Trevor Suslow**, University of California, Davis
- Remotely-sensed and field-collected hydrological, landscape and weather data can predict the quality of surface water used for produce production. **Martin Wiedmann**, Cornell University

**Moderator:** **Mike Villaneva**, California Leafy Greens Marketing Program

11:45 am – 1:00 pm

## Lunch

1:00 pm – 2:30 pm

## Hot Topics

Understanding what a positive STEC result means, determining effective ways to control *Lm*, quantifying the importance of parasites as a produce safety issue, and gaining insights into the role the physiological state of a pathogen may play in conducting validation experiments are at the cutting edge of food safety challenges. The programs in this final session will provide emerging data on these topics and commentary on how the industry can best apply this information.

- Rapid tests to specifically differentiate clinically significant from environmental STEC towards reducing unnecessary crop destruction. **Trevor Suslow**, University of California, Davis
- Evaluation of the efficacy of antimicrobial agents to prevent the transfer of *Listeria monocytogenes* from existing biofilms to produce or processing surfaces. **Rolf Joerger**, University of Delaware
- Methods for detection of diverse parasites on packaged salads based on (viable) oocysts. **Stefan Wuertz**, University of California, Davis
- Pathogen physiological state has a greater effect on outcomes of challenge and validation studies than strain diversity. **Martin Wiedmann**, Cornell University

**Moderator:** **Tiffiani Miller**, Florida Department of Agriculture and Consumer Services

# Agenda at a Glance

2:30 pm – 3:00 pm

**Panelists:** **Jennifer McEntire**, United Fresh Produce Association  
**Suresh DeCosta**, Lipman Produce  
**Max Teplitski**, National Institute of Food and Agriculture, USDA

## Break

3:00 pm – 3:45 pm

## Stakeholder Value Session – Buyers

**Moderators:** **Drew McDonald**, Taylor Farms  
**Bob Whitaker**, Produce Marketing Association

**Panelists:** **Natalie Dyenson**, Dole Food Company, Inc.  
**Mark Mignogna**, Sysco  
**Mike Spinazzola**, DRS International

3:45 pm – 4:30 pm

## Lasting Impressions

CPS Board Chair and President of Markon Cooperative **Tim York** will lead an interactive discussion with symposium participants about the key learnings presented over the two-day event, highlighting new information that will strengthen food safety programs.

4:30 pm – 4:45 pm

## Closing Comments

4:45 pm – 6:00 pm

## Reception



CPS Research Symposium 2016, Seattle