Welcome and IFSH Updates

Robert E. Brackett, Ph.D.
IIT Vice President and IFSH Director
IFSH Updates

• Membership
• IFSH Strategic Priorities
  – FDA Collaborative Research
  – Industry Services
  – Training and Outreach
• IFSH Events and Communications
IFSH Membership
IFSH Membership

• Our goal is to provide you with access to IFSH activities, programs, task forces, trainings and events that will be strategic for your role in your organization.

IFSH Member Delegate Addition Form
https://www.ifsh.iit.edu/members/resources/ifsh-member-delegate-addition-form
IFSH and Industry Collaboration
IFSH Members that Joined in 2019

Lamb Weston
SEEING POSSIBILITIES IN POTATOES

Universal Pure

Refrig IT Warehouse

Ingredion
IFSH Stakeholder/Member Engagements

- Contributions to and access to FDA collaborative research
- IFSH Annual Meeting
- Research Platform Advisory Meeting
- IFSH quarterly Technical Connections Meeting (TCM)
- IFSH Taskforces
- Annual Report of Research
IFSH Taskforces

• Low Moisture Foods Safety Taskforce
  – Pasteurization Taskforce

• Sprout Safety Taskforce

• Juice and Beverage Safety Taskforce
FDA Collaborative Research Programs - NCFST
NCFST Collaborative Research Platforms

- Food Processing
- Food Microbiology
- Food Chemistry and Packaging
- PT & Method Validation
- Nutrition
Food Processing Platform

Aims:

To provide a scientific basis for the processing and production of safe food, and support programs related to pasteurization, extended shelf life, sterilization and package integrity.
Microbiology Platform

Aims:
Evaluating microbial hazards in foods and food processing environments to support risk assessment and management

Areas of Study:
• Pathogen behavior in high-risk foods
• Characterizing pathogen survival / resistance to processes
• Sampling and detection – environments and foods
Food Chemistry and Packaging Platform

Aims:

1. Investigate approaches to prevent formation of hazardous chemical contaminants during processing
2. Prevent the cross-transfer of pre-formed natural toxins, allergens and man-made (environmental) contaminants in the food production environment
3. Evaluate factors affecting migration of packaging constituents and contaminants into food
4. Develop and evaluate novel approaches for detecting chemical contaminants, natural toxins and allergens
Proficiency Testing & Methods Validation Platform

Aim:
To establish and administer various food-matrix based chemical and microbiological proficiency and inter-laboratory programs for regulatory, food safety and capacity building and evaluation.
Proficiency Testing and Method Validation Programs

• Continued successful collaboration with CFSAN, ORA, CVM, USDA, DHS and FERN.
• Successful re-accreditation of ISO 17043.
• Developed training curriculum for “Method Validation and Statistics for Microbiological Methods”, and conducted two training workshops.
• Validation of *Cyclospora* detection method in agricultural water.
Continue to support research needs of ONFL:

- Consumer understanding of key terms used in labeling
- Consumer understanding of terms such as “Milk”, when used on plant-based milk alternatives
  - Assessing the variability in levels of target nutrients in plant-based milks products
  - Determining the effects of processing on nutrient levels in plant milks (cross platform collaboration)
Annual Report of Research 2018
IFSH Industry Services
IFSH High-Throughput Sequencing (HTS) Initiative
IFSH HTS Laboratory

- Illumina MiSeq Sequencers
- Oxford Nanopore MinIONs
- QIAcube
- Covaris
- BioAnalyzer
IFSH HTS Laboratory Services

- DNA/RNA extraction, purification and quantification
- Library preparation
- Whole Genome Sequencing (WGS)
  - Bacterial & other genomes
- Complete Genome Sequencing
  - Bacterial
- Metagenomics for environmental samples
  - Full or partial 16s rRNA & shotgun
- Transcriptomics or RNA-seq
  - Pure or mixed samples
Bioinformatics at IFSH

- Three High-Performance Computers (HPCs)
  - Fast, secure, reliable, accessible
  - 512 GB RAM; up to 64 cores

- High-capacity data storage & back up system
  - > 140 TB current capacity
  - Expandable

- Bioinformatics Services
  - Sequence quality control, trimming
  - Sequence assembly, assembly assessment
  - BLAST searches, sequence annotation
  - SNP analysis & phylogenetics
  - Custom databases and pipelines
IFSH HTS Projects

- Foodborne bacterial communities, their composition, transitions and biogeography
- Foodborne pathogen identification, characterization and rapid method development
- Human gut microbiome and diets
- Toxin production and regulation in model bacteria
- Microbial resistance against antibiotics, sanitizers, disinfectants, heat, cold and pressure
- Evolution of pathogenicity in foodborne bacteria
Industry Funded Research Projects

- Validation and challenge study projects – pathogens including *C. botulinum*
- Evaluation of new technologies or processing technologies
- Juices, beverages, petfood, packaging, fresh produce, meat, meatless
- Nutrition projects
  - Fiber validation for labeling
  - Chemical characterization of food and bioavailability of target components, including metabolites
  - Metagenomic studies
IFSH Training and Outreach
FSPCA Activities

• Standardized Curriculum Development
• Policies and Procedures
  – Policies, Protocols, Procedures, Value Propositions, MOUs
• Implementation and Outreach Programs
  – Train-the-Trainer Program Development
  – Technical Assistance Network
  – International Outreach Activities
FSPCA Standardized Curricula

- Preventive Controls for Human Foods (PCHF)
- Preventive Controls for Animal Foods (PCAF)
- Foreign Supplier Verification Program (FSVP)
- Intentional Adulteration (IA)
PCHF Metrics, as of August 31, 2019
Lead Instructors by country
PCHF Metrics, as of August 31, 2019
PCQI courses completed by country
PCHF Metrics, as of August 31, 2019
PCQI certificates issued by country
# FSPCA Training Metrics
(as of August 31, 2019)

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<th>PCHF</th>
<th>PCAF</th>
<th>FSVP</th>
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<td><strong>Courses Completed</strong></td>
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<td>International</td>
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# FSPCA Training Metrics
*(as of August 31, 2019)*

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<th>Lead Instructors Trained</th>
<th>Lead Instructor Courses Completed</th>
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<td>International</td>
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SAVE THE DATE!

FSPCA
FOOD SAFETY PREVENTIVE CONTROLS ALLIANCE

ANNUAL CONFERENCE
2019
Advancing Food Safety Collaboration

CHICAGO MARRIOTT SOUTHWEST
OCTOBER 22 - 23, 2019
Sprout Safety Alliance (SSA) Activities

• Hosting webinars
  - Testing requirements for sprout operations
  - Environmental monitoring
  - Lessons learned from the FDA 2017-2018 sprout assignment

• SSA training for retailers

• Small sprout grower support
## SSA Training Metrics
*(as of September 2019)*

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<td>Individual Sprout Growers</td>
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<td>Regulators Trained</td>
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<td>Sprout Retailer Trained</td>
<td>Supermarket Chain FS Managers</td>
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SSA Spanish Training

Sprout Grower Training in Spanish - Jan 2019

INTRODUCCIÓN A LA PRODUCCIÓN DE BROTES INOCUOS PARA EL CUMPLIMIENTO DE LAS REGLA DE INOCUIDAD DE LAS VERDURAS

Módulo 1
IFSH HTS Outreach Programs

• Within IFSH & IIT
  o Research projects with IIT and FDA researchers
  o Training staff/students: HTS and bioinformatic applications/tools

• With the industry
  o IFSH HTS Industry Advisory Committee
    o 20 members and > 30 representatives
  o IFSH HTS Industry-Governmental Agencies Council
    o With representatives from the industry, FDA, CDC, USDA/FSIS
    o Webinars and workshops

• Public
  o Symposia, workshops, roundtables
2019 HPP Short Course and Workshop

HIGH PRESSURE PROCESSING
SHORT COURSE AND WORKSHOP

April 8-11, 2019
At: Institute for Food Safety and Health, 6502 South Archer Road, Bedford Park, IL 60501

https://HPP-APRIL2019.EVENTBRITE.COM

SPONSORSHIPS ARE AVAILABLE!

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2020 HPP Short Course and Workshop

HIGH PRESSURE PROCESSING
SHORT COURSE AND WORKSHOP

April 27-30, 2020
At: Institute for Food Safety and Health, 6502 South Archer Road, Bedford Park, IL 60630

The 2020 HPP Workshop will include new hands-on opportunities allowing participants to compare food products treated with high pressure processing and conventional thermal processing side-by-side, understand the influence of packaging formulation and properties on the efficacy of high pressure processing, and understand the effects of high pressure processing on various quality attributes.

Register Today: https://bit.ly/2ZDcKjx
WHOLE GENOME SEQUENCING
SYMPOSIUM AND WORKSHOP

Symposium: May 6
Chicago Marriott Southwest at Burr Ridge
1200 Burr Ridge Parkway
Burr Ridge, IL 60527

Workshop: May 7
Institute for Food Safety and Health
6502 South Archer Road
Bedford Park, IL 60501

SPONSORSHIPS ARE AVAILABLE!
Register Today To Save!
https://wgsmay2019.eventbrite.com
Managing Microbiological Testing as a Preventive Control Verification Symposium

SAVE THE DATE!

October 24, 2019

At: Chicago Marriott Southwest at Burr Ridge, 1200 Burr Ridge Parkway, Burr Ridge, IL 60527

Sponsorships Available
HTTPS://IFSH-FRI-OCT2019.EVENTBRITE.COM
LEARN MORE IFSH.IIT.EDU FRI.WISC.EDU
IFSH Events and Communications
SAVE THE DATES

Sprout Grower Blended Course Part 2  
October 21, 2019, Institute for Food Safety and Health, Bedford Park, IL

FSPCA 2019 Annual Conference  
October 22-23, 2019, Chicago Marriott Southwest, Burr Ridge, IL

IFSH & University of Wisconsin’s Food Research Institute Joint Symposium:  
Managing Microbial Testing as a Preventive Control Verification  
October 24, 2019, Chicago Marriott Southwest, Burr Ridge, IL

FSPCA IX Conducting Vulnerability Assessments Participants Course  
October 24, 2019, Institute for Food Safety and Health, Bedford Park, IL

FSPCA Preventive Controls for Human Foods Participant Course  
November 6-7, 2019, Institute for Food Safety and Health, Bedford Park, IL

Better Process Control School (BPCS), Acidified Foods Only  
December 4-5, 2019, Institute for Food Safety and Health, Bedford Park, IL

Better Process Control School (BPCS) Course  
February 25-28, 2020, Institute for Food Safety and Health, Bedford Park, IL

High Pressure Processing Short Course and Workshop  
May 12-15, 2020, Institute for Food Safety and Health, Bedford Park, IL

High-throughput Sequencing Symposium and Workshop  
May 2020, Workshop held at Institute for Food Safety and Health, Bedford Park, IL

Method Validation and Statistics for Microbiological Methods  
September 2020, Location TBD

IFSH 2020 Annual Meeting  
September 22-23, 2020, Chicago Marriott Southwest, Burr Ridge, IL

IFSH & University of Wisconsin’s Food Research Institute Joint Symposium  
September 24, 2020, Chicago Marriott Southwest, Burr Ridge, IL

Good Manufacturing Practices (GMP) Course  
October 13-14, 2020, Institute for Food Safety and Health, Bedford Park, IL

Better Process Control School (BPCS), Acidified Foods Only  
November 17-18, 2020, Institute for Food Safety and Health, Bedford Park, IL

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