

See food innovation with a
whole new lens.



SHiFT20

Virtual Event and Expo

July 13-15, 2020

iftevent.org

SHIFT20 Program Overview

Food innovation is evolving at a rapid pace, consumer perceptions are evolving, and the IFT community is leading the way. Accelerating the science of food and technology to sustainably feed and nourish the world's population is the mission of IFT and nowhere is this more evident than when we come together through IFT20s virtual experience to share, imagine, and collectively solve challenges impacting our global food supply.

But in order to do this, we need to approach innovation differently, we need to challenge the status quo, and we need to cross disciplines to gain new insights and shift our thinking to bring the world better food.

IFT20 is where this shift begins.

Featured Speakers



April Rinne

Monday, July 13

SHIFT20 Virtual Event and Expo will kick off with a thought-provoking keynote address with April Rinne, member of the World Economic Forum, speaker, writer, and authority on the new economy, future of work, and global citizenship.

The world is changing, and April has spent her career making sense of these changes from the perspective of a trusted advisor, advocate, thought leader and lifelong global citizen. With more than 20 years and 100 countries of experience at the 50-yard line of emerging innovation, April brings a keen eye towards where the world is heading with no greater purpose than to help build a brighter tomorrow.

In this keynote April will explore the critical role that food science, emerging technologies, and the food industry will need to play in addressing food security in the face of our current pandemic times and global climate change. Come prepared to ask questions and share insights with April and the broader attendee community



Frank Yiannas

The Future of Food Safety with Frank Yiannas, FDA Deputy Commissioner for Food Policy and Response

Tuesday, July 14

In this session, Frank Yiannas, FDA Deputy Commissioner for Food Policy and Response will discuss the cross-section of data science and emerging technologies shaping the future of food safety and how they can deliver benefits for all across the food supply chain. The Deputy Commissioner will participate in Q&A session following the discussion.

About Frank Yiannas

In addition to being the current FDA Deputy Commissioner for Food Policy and Response and working for several well-known global brands including Walmart and the Walt Disney Company, Frank Yiannas is the author of Food Safety Culture: Creating a Behavior-Based Food Safety Management System, Past President of the International Association for Food Protection, and recipient of the 2007 NSF Lifetime Achievement Award for Leadership in Food Safety.

Featured Speakers



Eve Turow-Paul **Hacking Millennial and Gen Z Tastes** **with Eve Turow-Paul**

Wednesday, July 15, 2:00–5:00 p.m. CT

How do you address generational differences and demands in the shifting consumer base? Join us for an exciting, virtual product development hackathon informed by the work of Eve Turow-Paul, the author of *A Taste of Generation Yum* and the go-to expert on the high-value realm of millennials and food.

About Eve Turow-Paul

Eve Turow-Paul is a globally-recognized writer and thought-leader on youth culture and the food system. With her unique blend of investigative reporting, analysis of academic research and lifestyle markets, Turow-Paul identifies the wants and needs that explain today's hottest trends.

Turow-Paul utilizes her decade of empirical research to advise Fortune 500 companies, start-ups and independent entrepreneurs on how to connect with and better serve people in the Digital Age. She is a Forbes contributor and the author of *A Taste of Generation Yum: How the Millennial Generation's Love for Organic Fare, Celebrity Chefs and Microbrews Will Make or Break the Future of Food*. Her writing on food trends and human behavior has appeared in a number of publications including *The Chicago Tribune*, *Plate*, *The Village Voice*, on *The Atlantic*, *Refinery29*, *Huffington Post* and more. Recently, she was prominently featured in the documentary film *WASTED! The Story of Food Waste*, which premiered at *Tribeca Film Festival*. *Turow-Paul's second book, Hungry, is due out June 2020.*

VIRTUAL EVENT AND EXPO SCHEDULE AT A GLANCE

All times are in Central Standard Time.

Monday, July 13

9:30 – 10:30 a.m.

KEYNOTE with April Rinne

10:30 – 11:00 a.m.

Visit virtual expo showcase, browse on-demand scientific sessions and poster presentations

11:00 a.m. – 12:00 p.m.

Panel: Building Food Security into Resilient Cities
Discussion with live Q&A

12:00 – 1:00 p.m.

Expo Power Hour: Visit and explore virtual expo showcase
Browse and listen: Scientific sessions and poster presentations
Topical Division Luncheons with live speakers

1:00 – 2:00 p.m.

Panel: Our food system is killing our earth.
What are we going to do about it?
Discussion with live Q&A

2:00 – 4:00 p.m.

Visit and explore: Virtual Expo Showcase
Browse and Listen: Scientific Sessions and Poster Presentations

4:00 – 5:00 p.m.

Fireside Chat: Food Security in Light of COVID-19 and Post COVID

5:00 p.m.

Daily Wrap Up
Opening Virtual Reception

VIRTUAL EVENT AND EXPO SCHEDULE AT A GLANCE

All times are in Central Standard Time.

Tuesday, July 14

9:30 – 10:30 a.m.	Panel: Stop Wasting Waste—Upcycling Our Future
10:30 – 11:00 a.m.	Visit virtual expo showcase, browse on-demand scientific sessions and poster presentations
11:00 a.m. – 12:00 p.m.	Panel: Striving for Equitable Distribution of Nutrition Discussion with live Q&A
12:00 – 1:00 p.m.	Expo Power Hour: Visit and explore the Virtual Expo Showcase Browse and listen: Scientific sessions and poster presentations Topical Division Luncheons with live speakers
1:00 – 2:00 p.m.	Fireside Chat: How to Support and Advance Sustainability in Food Systems During- and Post-CoVid-19 Discussion with live Q&A
2:00 – 4:00 p.m.	Expo Power Hour+: Visit and explore the Virtual Expo Showcase Browse and Listen: Scientific Sessions and Poster Presentations
4:00 – 5:00 p.m.	Special Guest: Frank Yiannas, Deputy Director for Food policy & Response, FDA Future of Food Safety
5:00 p.m.	Daily Wrap Up Social/Reception

VIRTUAL EVENT AND EXPO SCHEDULE AT A GLANCE

All times are in Central Standard Time.

Wednesday, July 15

9:30 – 10:30 a.m.

Panel: Data Revolution: Is Food Safety Sitting on the Side Lines?

10:30 – 11:00 a.m.

Visit virtual expo showcase, browse on-demand scientific sessions and poster presentations

11:00 a.m. – 12:00 p.m.

Fireside Chat: The Potential of Artificial Intelligence to Transform the Food SystemA

12:00 – 1:30 p.m.

Expo Power Hour: Visit and explore the Virtual Expo Showcase

Browse and listen: Scientific sessions and poster presentations
Topical Division Luncheons with live speakers

2:00 – 5:00 p.m.

Hacking Millennial and Gen Z Tastes
New product development hackathon with Eve Turow-Paul

5:00 p.m.

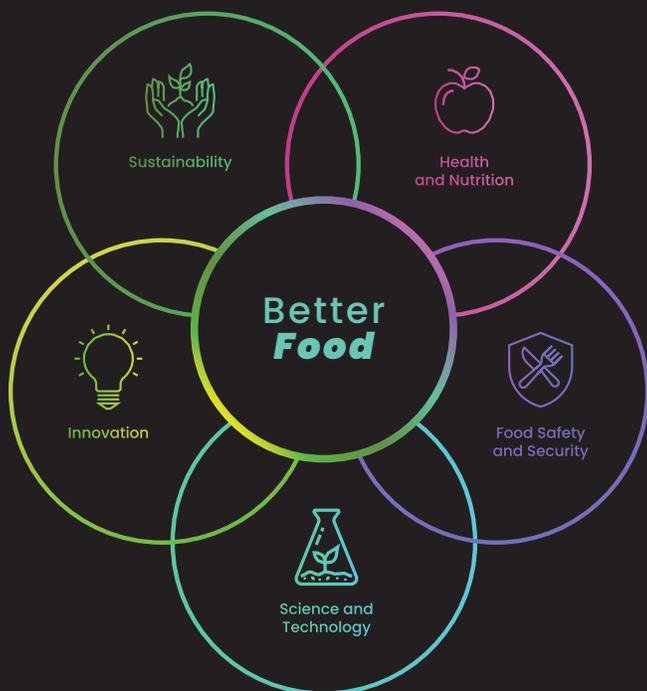
Daily Wrap Up
Closing Reception

SHIFT20 Scientific Program Overview

Explore challenging topics to help solve some of the world's biggest food issues. IT20' scientific and applied sessions are designed explore the important topic of our planet's sustainability and its impact on our global food supply. More specifically posing the question:

Could the **food** that sustains our world also be the **biggest threat** to our **survival?**

To answer this question, we will explore, discuss, and debate through five topical areas including health and nutrition, food safety and security, food sustainability, science and technology, and innovation.



Sessions Program Highlights

Each sessions topical area will be anchored by a provocative panel discussion setting the stage for a series of presentations, discussions, and fireside chats taking a closer look at the science, technology, and research tackling these important issues.

Health and Nutrition

Panel: Striving for the Equitable Distribution of Nutrition

In 30 years, the possibility of going to sleep hungry at night is a reality that the majority of the world's population could face. This panel and supporting sessions series will explore and discuss of how to solve today's issues of nutrition scarcity, and what tangible outcomes we need to embrace.

Panelists include:

- **Corby Kummer**, Editor, IDEAS Magazine and director of Food and Society Program at the Aspen Institute, senior editor, The Atlantic
- **Mario Ferruzzi**, David H. Murdock Distinguished Professor at North Carolina State University
- **Chiara Cecchini**, CEO & Co-Founder at Future Food Institute

Below are sessions currently being developed for the SHIFT20 virtual program. We will continue to update this information as more details become available. Stay tuned for our online event planner coming soon! The event planner will allow you to search by topic, title, speaker or keywords to create your personalized event schedule.

Health and Nutrition Sessions

Can I Say That? Mitigating Risks from Claims in Labeling and Advertising

Speakers:

Neal Fortin, JD – *Professor and Director, Michigan State University, Institute for Food Laws*

Victoria Jalo – *Senior Regulatory Counsel, Whole Foods Market*

Ebru Basaran-Shull – *Director, Compliance and Government Affairs, Sargento Foods*

Steve Armstrong – *EAS Consulting*

Food manufacturers strive to stay current and create product claims that resonate within the evolving values of consumers. However, popular label claims often are not clearly defined in law or in consumer expectations. To avoid regulatory action, avoid litigation, and maintain consumer trust companies must learn how to navigate through this risky environment. This navigation often begins with a strategy for determining the ideal level of claims. Tools for analyzing consumer interpretations of attribute claims will help manufacturers ensure customers' expectations are met while conveying accurate, transparent information. This analysis also provides evidential support of attribute label claims. Development of a team approach combined with an evolving in-house strategy can ensure the continued distribution of accurate and truthful claims to consumers. Finally, building trust with consumers can also mitigate the risk of loss of consumer confidence.

Health and Nutrition

Health and Nutrition Sessions

Fireside Chat: Advances in Rare Sugars; Taste/Flavor Attributes, Functionality and Processing of Allulose and Tagatose for Reduced Sugar Foods and Beverages

Speakers:

Didem Icoz, PhD in Food Science; MS&BS in Food Engineering – *Business Scientist, Ingredion Incorporated*

Cesar Contreras – *ASR Group*

Judie Bizzozero – *Editor in Chief, Informa Markets-Natural Products INSIDER*

Akshay Kumar Anugu, Ph.D. – *Senior Associate, Ingredion Incorporated*

Daniel Wichelecki, PhD – *Chief Scientific Officer, Bonumose LLC*

Yuma Tani – *Assistant Manager, Matsutani Chemical Industry Co. Ltd*

Ed Rogers – *Chief Executive Officer, Bonumose LLC*

This fireside chat is an interactive session aimed to answer any questions you may have in selecting and formulating with tagatose and allulose in your sugar reduction applications. Our expert guests will provide insights into formulation challenges in replacing sugar and how tagatose and allulose will assist product developers in developing the best tasting reduced-sugar food and beverages. Bring your challenges and take-home solutions.

Feeding the Gut: Food Structure and the Microbiota

Speakers:

Vincenzo Fogliano – *Professor, Wageningen University*

Pete Wilde, Prof. (PhD) – *Group Leader, Quadram Institute Bioscience*

Simon Carding, PhD – *Quadram Institute Biosciences*

Peter Turnbaugh, Dr – *University of California San Francisco*

Fred Warren, PhD – *Quadram Institute Biosciences*

This session will explore this emerging area of how we could potentially manipulate the microbiota through rational use of food processing. The symposium will feature presentations introducing the role of diet on the microbiota functionality, followed by presentations describing the latest research on the role of food structure and physical chemistry on microbiota composition and functionality, and finally some future perspectives on how the food industry could develop foods designed specifically to improve microbiota functionality. The main goal of the session is to demonstrate that not only is diet important for a healthy microbiome, but that how the food is processed and structured matters as well.

Food and Nutrition Innovation Through Synthetic Biology

Speakers:

Michael Miller – *Associate Professor, University of Illinois*

Yong-Su Jin – *Assistant Professor, University of Illinois*

Toshiya Muranaka, PhD – *Professor, Osaka University*

Darren Streiler – *Investment Director, ADM*

Health and Nutrition

Health and Nutrition Sessions

In this session, four speakers who have been involved in developing and facilitating synthetic biological innovations in food and nutrition will give presentations including an overview of synthetic biological approaches in food innovation, microbial metabolic engineering to produce food ingredients, plant genome engineering to minimize anti-nutritional metabolites, and venture capital funding to foster startup companies seeking synthetic biological innovations. After these presentations, a panel discussion to explore potential limitations and solutions will be facilitated.

Going Keto: Discovering the What, the Who, and the How of the Keto Friendly Diet

Speakers:

Marshall Weston – Senior Food Scientist, *Ingredion Incorporated*

Lu Ann Williams – Director of Innovation, *Innova Market Insights*

Heidi Adams – Tech Srvc Mgr Swttnr Cstmr Sltns, *Ingredion Incorporated*

Kristen Smith, PhD, RDN – Principal Scientist, *K & T Consulting Services, LLC.*

Ramesh Reddy Yettella, PhD, Food Science and Technology – Customer Innovation Manager, *AAK*

Rich Stewart, B. S. Food Science – Tech Service Project Leader, *Ingredion Incorporated*

The session will start by offering a registered dietitian's nutrition perspective on the keto diet. The keto diet has been used to manage a range of medical conditions, and more recently it has gained attention as a popular diet. The next section will review the latest in consumer and product trends for this lifestyle diet with legs. With consumers seeking more personalized solutions for their nutrition needs, lifestyle diets such as keto present an interesting opportunity for the industry. The final segments will provide strategies, tools and tips relative to fats, proteins and sugar replacers that are key to achieving great tasting products in keeping with requirements of this dietary regimen. Reformulating products to meet keto dietary guidelines can pose numerous challenges for the food scientist.

Impact of Diet-Microbiota Interactions on Human Health

Speakers:

Rotimi Aluko – Professor, *University of Manitoba*

Devin Rose – Associate Professor, *University of Nebraska, Lincoln*

Tiffany Weir, PhD – Associate Professor, *Colorado State University*

Kaustav Majumder – Assistant Professor, *University of Nebraska, Lincoln*

Margaret Morris – Professor, *The University of New South Wales*

Carolyn Slupsky, PhD – Professor, *University of California, Davis*

In this session we will evaluate the interactions between dietary compounds and the gut microbial community and its potential significant impact on human health. We'll also discuss the importance of understanding this interaction for further develop nutraceuticals and functional foods.

Health and Nutrition

Health and Nutrition Sessions

Neurodegeneration by Diverse Environmental and Physical Stressors: Protection by Structurally Diverse Nutraceuticals and Functional Foods

Speakers:

Sreejayan Nair, PhD, FAHA, FACN – Professor of Pharmacology and Director Biomedical Sciences Graduate Program, University of Wyoming School of Pharmacy

Debasis Bagchi, PhD, MACN, CNS, MAICHe – Director of Scientific Affairs & Professor, University of Houston College of Pharmacy

Chin-Kun Wang, Ph.D – Past-Pro-Vost and Professor, Chung Shan Medical University

Bernard Downs – Director of Research, Victory Nutrition International, Inc.

Abhai Kumar, PhD – Principal Scientist, Banaras Hindu University

Sayantana Maitra, PhD – Institute of Pharmacy, Jalpaiguri, Govt. of West Bengal

The World Health Organization (WHO) reports that about 50 million people suffer from dementia, with one new case every three seconds, and predicts that with increasing social and economic impact and lack of curative treatment, this number will rise to 150 million by 2050. The introductory theme will discuss the noxious effects of diverse factors including advancing age, stress, diverse environmental pollutants, and chronic inflammatory responses in the brain vicinity causing an array of cognitive decline. The mechanistic synopsis will be exhibited. The next lecture will correlate mitochondrial oxygenation and its potential decline and dysfunction leading to an array of motor neuron diseases and discuss the potential protective abilities of functional foods. The third speaker will discuss the array of ocular neurodegenerative disorders leading to retinal detachments and vision loss and demonstrate the protective roles of nutraceuticals. The fourth speaker will discuss the neuroprotective abilities of different phytopharmaceuticals.

Nutrient Dense Foods: Policy, Public Health Implications, and Food Innovations

Speakers:

Joanne Slavin, PhD, RDN – Professor, University of Minnesota

Jie Sun, Ph.D. – Principal Scientist, General Mills Inc

Adam Drewnowski, Ph.D. Professor of epidemiology – Director, Center for public health Nutrition, University of Washington

Marissa McCormick, M.S., RD – Nutrition Scientist, General Mills

In this symposium, we will review different methods for defining the nutrient density of a food and highlight the importance of considering food groups in this definition; two current examples of nutrient density that are relevant to nutrition policy and regulation including the ongoing update to FDA's definition of the 'healthy' nutrient content claim and the upcoming 2020-2025 Dietary Guidelines for Americans; and the application of nutrient density to food product innovation and reformulation for food manufacturers.

Health and Nutrition

Health and Nutrition Sessions

Nutrient Profiling: From the Global Landscape to the Evidence Base

Speakers:

Nitin Joshi, VP – *Product Development, DMI / Pizza Hut*

Roger Clemens, DrPH, CFS – *Adj Professor, University of Southern California*

Moises Torres-Gonzalez, PhD – *Vice President, Nutrition Research, National Dairy Council*

Claire Kruger, PhD, DABT, CFS – *Managing Partner, Spherix Consulting Group*

Amy Boileau - *Vice President, Regulatory Affairs, National Dairy Council*

This symposium will review emerging regulations and global applications of nutrient profiling with a look at the evidence base for efficacy of nutrient profiling to change consumer behavior. The session will also explore the potential for unintended consequences of nutrient profiling/front of pack labeling and address the question of whether existing approaches oversimplify the relationship between the foods we eat and human health.

Plant-Based Protein: A Marketing Dilemma

Speakers:

Chris Marinangeli – *Director of Nutrition Science & Regulatory Affairs, Pulse Canada*

Sylvain Charlebois, PhD – *Professor/Director, Dalhousie University*

Martin Hahn, JD – *Hogan Lovells US LLP*

Carolina Venditti, PhD – *Scientific and Regulatory Consultant, Intertek Health Sciences*

Kathy Musa-Veloso, Ph.D. – *Senior Director, Intertek Health Sciences*

Using data generated from several surveys, including a recent 2018 survey of Canadians, the market trends for consumer beliefs and purchase intent when it comes to meat consumption versus plant-based protein consumption will be shared. Additionally, market trends from an industry perspective will be evaluated. Furthermore, speakers will discuss the challenges in marketing plant-based protein versus animal-based protein, and the substantiation requirements and qualifying criteria for the various claim categories. Finally, litigation related to plant-based protein will be reviewed in an effort to elucidate the current challenges in marketing plant-based protein and how to minimize risk.

Probiotics Paradise: Public Perception, Product, Proof

Speakers:

J. David Legan, PhD – *Associate Director, Science, Eurofins Microbiology*

Jean Schoeni, Ph.D. – *Principal, Jean L Schoeni LLC*

Andrzej Benkowski, B.Sc. – *Probiotics Technical Leader, Eurofins Microbiology*

George Paraskevacos – *Executive Director, International Probiotics Association*

Carmen Tartera, Ph.D. – *Research Microbiologist, FDA - CFSAN*

Megan Brown – *Method Validation Microbiologist, Eurofins Microbiology Laboratories*

Juan Pellecer, M.Sc. – *Senior Technical Manager, The National Food Lab, Inc.*

This session will explore three pressing questions our developing market and technologies need to consider. Product marketers ask, 'What does the market look like today and where is it going?'

Health and Nutrition

Health and Nutrition Sessions

whereas manufacturers and product developers ask ‘How do food companies formulate products to keep the probiotics alive?’ For consumers and manufacturers, the question is ‘How can I be sure that what is on the label is in the package?’ This symposium will address all three questions with examples of current best practices and leading-edge technologies.

Understanding the Benefits of Resistant Starch Fibers and Low-FODMAP Ingredients to Improve Digestive Wellness

Speakers:

Diana Nieto-Velez, MS – Senior Business Development Manager, Ingredion Incorporated

Tom Vierhile – VP Strategic Insights, North America

Alan Greensmith, BA, MBA – US Head of Commercial Development, Monash University

Vishnupriya Gourineni, PhD – Scientist, Ingredion Incorporated

Kati Kauffman – Sr. Wellbeing & Regulatory Business Partner, Kelloggs.

In this session we will discuss the low-FODMAP diet and its emerging popularity as a first line of therapy for those suffering from irritable bowel syndrome (IBS), a disorder which is becoming a global phenomenon and how the low-FODMAP certification will propel product development and innovation, expanding the potential of this diet from niche to mainstream markets.

What’s in a Name? The Rules and Regulations Surrounding Labeling Foods

Speakers:

Lilian Were, Ph.D. – Associate Professor, Chapman University

Kris Deangelo, JD, LLM – Instructor, Michigan State University, Institute for Food Laws & Regulation

KatieRose McCullough, PhD, MPH – Director of Regulatory and Scientific Affairs,
North American Meat Institute

Debbie Nece – Scientific and Regulatory Affairs Director, Cargill Incorporated

Trevor Findlay – Deputy Director of the Food Disclosure and Labeling Division, USDA

Judy Boucek, DSM

In the news today, we hear about such products as lab-based meat and dairy, plant-based burgers that bleed, insect pasta, algae, super mushrooms, and a host of dairy products that are made from non-traditional sources. Consumers are pressuring the industry to deliver ‘transparent’ labels, and purposeful claims impacting their own human health. Truthful and non-misleading labels are important to the consumers and industry, but this has not come without some pushback on the language that is required for certain claims and product standards. Experts will discuss current technologies and how they fit into the current labeling regulatory scheme; current challenges to standards of identity; and the issues of how competitors may challenge your product and your labeling; and why the public perception may be both your friend and your enemy.

Health and Nutrition



Developing Countries: Food Science in Action...or Inaction?

Speakers:

Donna Rosa – Chief Entrepreneurship Officer, Aidpreneurship

Charbel Abou Haidar – Lebanon F2F FSQ Country Director, Land of Lakes Inc.

Evie Severyn – Sr. Quality Manager & Global Markets Development, Land of Lakes Inc

Evie Severy – Land O'Lakes

Charbel Abou Haidar – Land O'Lakes

Humanitarian Food Science and Technology (HFST) is an exciting up-and-coming specialization in the field of food science. HFST seeks to apply food science to international development (aid work) to enhance global food security. Traditionally the focus has been on agriculture and nutrition, both in the form of external aid. While aid is critical in emergency and other specific situations, it is not a sustainable long-term solution. HFST takes a different approach by utilizing and developing local resources to enrich, enable and empower communities. This is the real world of food science in international development.

UN Sustainable Development Goal (SDG 2): Zero Hunger Challenge

Speakers:

Kiruba Krishnaswamy, PhD – Assistant Professor (Sustainable Food Engineering), University of Missouri

Carla Mejia, PhD – Food Safety and Technology Officer, World Food Program

Morgan Day – Director of Global Programs & Partnerships, The World Food Prize Foundation

Judy Boucek, DSM

According to the 'The State of Food Security and Nutrition in the World 2019' (FAO), the number of hungry people is still on the rise. However, nearly one third of all food produced for human consumption is lost before it reaches consumers. The global population is set to grow to 9 billion in 2050, with an additional 1 billion people in Africa, urbanization is set to increase to 78% in 2050. Food science and technology is at the core of the Sustainable Development Goal (SDG) 2 that aims to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. About 2 billion people are affected by hidden hunger (micronutrient deficiency) and 821 million people affected by chronic hunger issues. On the other hand, food losses are an important issue when combating hunger, raising incomes and improving food security (FAO Global food losses and food waste). Not only do food losses impact food and nutrition security, especially for poor people, but also affect food quality and safety, economic development and the environment. This general lack of awareness of the junction between food science and sustainable development results in lack of innovation targeted to foods or food ingredients for humanitarian purposes, their safety or stability; and little attention is given to capacity development throughout value chain addition in the poorest sectors of the population. This panel discussion will bring thought leaders from industry, NGOs, the UN, and academia together to discuss partnerships to achieve the zero hunger target.



Food Safety and Security

GUEST SPEAKER: The Future of Food Safety with Frank Yiannas, FDA Deputy Commissioner for Food Policy and Response

Tuesday, July 13

In this session, Frank Yiannas, FDA Deputy Commissioner for Food Policy and Response will discuss the cross-section of data science and emerging technologies shaping the future of food safety and how they can deliver benefits for all across the food supply chain. The Deputy Commissioner will participate in Q&A session following the discussion.

About Frank Yiannas

In addition to being the current FDA Deputy Commissioner for Food Policy and Response and working for several well-known global brands including Walmart and the Walt Disney Company, Frank Yiannas is the author of Food Safety Culture: Creating a Behavior-Based Food Safety Management System, Past President of the International Association for Food Protection, and recipient of the 2007 NSF Lifetime Achievement Award for Leadership in Food Safety.

Featured Panel with Live Q&A

Data Revolution: Is Food Safety Sitting on the Side-Lines?

We live in an era of disruptions, where data is the new “oil” and the innovation cycle is shortening like never before in human history. Ironically, big data-driven improvements and disruptions have not yet arrived in one of the most fundamental cornerstones of our industry: food safety. This panel discussion will address what we have learned from the COVID-19 pandemic and what is needed to leverage data and analytics in the future for food safety.

Panelists include:

- **Maria Velissariou**, CSTO, Institute of Food Technologists (IFT)
- **Vikrant Dutta**, Senior Staff Scientist, bioMerieux
- **Seán Leighton**, Global VP of Food Safety, Quality & Regulatory Affairs, Cargill
- **Cronan McNamara**, CEO & Founder, Crème Global



Food Safety and Security

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Better Food Fights: Current and Alternative Roles for Food Scientists in Food Politics

Speakers:

John Coupland - Professor, Pennsylvania State University

Cesar Vega Morales, Ph.D. - Author

Christy Spackman, Ph.D. - Assistant Professor, Arizona State University

The claim that (food) science creates objective knowledge is central to the functioning of the dominant industrial food system that feeds most of the people on the planet. However, these scientific truths are not always accepted, nor do they mean food is without controversy. In this session we take a multidisciplinary look at the intersection between food politics and food science, and to the possible roles of food scientists.

Bridging the Gap Between Quality and Safety: Emergence and Mitigation of Potentially Harmful Processing Contaminants During Thermal Food Processing

Speakers:

Robert Sevenich, Ph.D. – Research scientist, Technical University Berlin

Alexander Mathys, Prof. Dr. – Head of Sustainable Food Processing Laboratory, ETH Zurich

Felix Schottroff – University Assistant, BOKU Vienna

Maximilian Gratz, DI – PhD Student, BOKU Vienna

Richard Stadler, Dr. – Head, Institute Food Safety & Analytical Science, Nestle Research, Lausanne, Switzerland

This session is divided into three different sections (covered by five talks), addressing key issues. Background and analysis of neo-formed contaminants, in-depth information on heat-mediated formation of toxic substances from foodborne precursors, analytical tools for quantifications, as well as nutritional physiological implications, will be presented.

Establishing a Sustainable Food System to Improve Microbial Safety of Locally Grown Fresh Produce: Research and Extension Activities Updates

Speakers:

Cangliang Shen, Ph.D. – Associate Professor/Extension Specialist, West Virginia University

Hanna Khouryieh, PhD – Associate Professor, Western Kentucky University

Yifan Zhang – Professor, Wayne State University

Lisa Jones, M.S. – Program Coordinator, West Virginia University

Sanja Ilic – Assistant Professor, Ohio State University

In the past 20 years the number of local farmers markets and urban community gardens in the U.S. has grown dramatically. There is limited information on the safety of fresh produce associated with this sector of agriculture. This session will begin with an overview of consumers' perception and awareness of safety of locally grown fresh produce sold at farmers' markets in Kentucky; followed by an updated research of antimicrobial-resistant E. coli and Enterococcus spp. from urban agricultural soil and vegetables elucidated by whole-genome sequencing technology; then the recent research



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and extension activities of post-harvest plant onsite validation studies and the recognition of antimicrobial resistant issue among farmers' market vendors at Michigan and West Virginia will be explored; then the food safety during the primary production of fresh produce in the field and hydroponic systems will be presented as data collected in experimental and commercial settings; and finally the introduction of West Virginia Small Farm Center outreach activities to assist rural West Virginia small farmers to develop their own food safety plan to improve microbial safety of locally grown produce will conclude the session. The invited speakers' presentations are outcomes of USDA-NIFA funded projects, which represent microbial safety status of locally grown fresh produce in multiple states in the U.S.

Food Safety: Going Viral

Speakers:

Joy Dell'Aringa – *Scientific Marketing Manager, bioMerieux*

Prasant Prusty – *Pathogenia*

Erin Crowley, Chief Science Officer – *Q Labs*

Efi Papafragkou – *FDA*

Franck Chatigny – *bioMerieux*

Foodborne virus monitoring and testing is evolving. As technology, awareness, and access to testing expands, so does the need for understanding of appropriate application. Our panel of experts will explore: the global virus landscape in food testing and risk management, the cost of recalls and outbreaks, technology innovations, considerations and precautions when implementing a virus testing program, regulatory and epidemiological perspectives, and beyond COVID-19 – how emerging public health threats impact your virus food safety program.

FSMA Full Enforcement Impact on Food Safety: Data Analyses, Stats, Trends, and Challenges

Speakers:

Allen Saylor – *EAS Consulting Group, LLC*

Purnendu Vasavada – *Professor Emeritus, EAS Consulting Group, LLC*

Amy Scanlin, M.S. – *Marketing Coordinator, EAS Consulting Group, LLC*

Glenn Bass, M.S. – *Deputy Director, Human and Animal Food Operations,, Food and Drug Administration*

Loralyn Ledenbach – *Principal Scientist, The Kraft Heinz Company*

Bill Marler, Esq – *Attorney, Marler Clark LLP PS*

In this session panelists will present an analysis of data from FDA Form 483s; inspection reports and enforcement actions; FDA recall data; CDC morbidity and mortality and epidemiological information; US Customs food shipment holds and rejections; as well as private third-party certification audit and other private food safety data sources to provide factual insights into whether FSMA is working, how it is working, where it is working and where it is not.



Food Safety and Security

Food Safety and Security Sessions

Hydrostatic Pressure-Based Processes on the Safety and Quality of Meat Products for Human and Pet Consumption

Speakers:

Jorge Saraiva, PhD. – Assistant Researcher, LAQV-REQUIMTE, Department of Chemistry, University of Aveiro

Carlos Pinto – PhD Student, University of Aveiro

Vinício Serment-Moreno, Ph.D. – HPP Applications & Food Processing, Hiperbaric USA Corp.

S. Balamurugan, Ph.D. – Research Scientist, Guelph Research and Development Centre

Patricia Reyes, MS – PhD student, University of Nebraska – Lincoln

Non-thermal food processing technologies can provide safe and fresher food products where heat is not applied, allowing for better retention of sensorial, nutritional, and functional properties. High pressure processing (HPP) is gaining attention over the last few years, with a notable expansion of in use across markets. In the meat industry, HPP is usually applied as a post-lethal intervention to minimize risk associated with the pathogen *Listeria monocytogenes* and extend shelf-life, while limiting the use of chemical preservatives to prevent the growth of spore formers. Overall, this session features safety updates of HPP for RTE meat products and reduced-salt meats, while exploring HS and HPT as novel strategies for raw-meat processing.

Innovations in Cold Plasma and Gaseous Chlorine Dioxide as a Waterless Antimicrobial Process for Industrial Use

Speakers:

Brendan Niemira, PhD – Research Leader, USDA, ARS, ERRC

Cheng-An Hwang, Ph.D. – Research Food Technologist, USDA, ARS, ERRC

Vivian Wu – Research Leader, USDA-ARS-WRRC

Renee Boyer, PhD – Associate Professor, Virginia Polytechnic and State University

Alison Lacombe – Research Microbiologist, USDA, ARS, WRRC

Greg Fridman, PhD – CEO, AAPlasma LLC

The session will address the knowledge gaps between laboratory models, pilot-scale proof-of-concept, and implementation on the industrial scale. This symposium will address the critical challenges of troubleshooting engineering controls concerning scaling, worker safety, and compliance with the regulatory framework.

Intelligent Packaging Comes of Age: Technology Development, Consumer Views, and Present Applications That Meet Value-Chain Drivers

Speakers:

Ziyneet Boz – Assistant Professor, University of Florida, PTR LLC.

Mohamed Ziyaina – Cheesemaker Scientific, Washington State University

Claire Sand, Ph.D. – CEO; Adjunct Professor, Packaging Technology and Research, MSU, CalPoly.

Sonali Raghunath, MS – PhD student, University of Minnesota



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Ted Labuza, Ph.D. – Professor, University of Minnesota

Virpi Korhonen – Managing Director, Packaging Testing and Research, LLC

Inbar Dag, Ph.D. – Vice President, New Product Introduction, Evigence Sensors

Intelligent packaging is being employed in response to many drivers, such as track and trace, shelf life, allergens, sustainability, and food waste reduction. Intelligent packaging has a unique position within the food and beverage industry because it enables packaging to facilitate added value throughout the value chain. Today, the most readily accessible and simple categories of intelligent packaging encompass branding (e.g. differentiation, protection, and authentication) and functional platforms (e.g. freshness indicators). Consumer research that guides decision making and that has aligned intelligent packaging with current applications in the dairy industry and the advancement of technology into the digital age will be shared.

Is This the Protein It Claims to Be? Identification and Purity Methodology for Authentication, Adulteration Detection, and Quality Evaluation

Speakers:

Zhuohong (Kenny) Xie, Ph.D., CFS – Scientific Liaison, US Pharmacopeia

Melanie Downs, Ph.D. – Assistant Professor, University of Nebraska-Lincoln

John Szyplka – Director of Scientific Affairs Chemistry NA, Mérieux NutriSciences

Sneh Bhandari, Ph.D. – Director of Chemistry R&D, Mérieux NutriSciences

Spencer Carter – Dyad Labs

The symposium will start with a background about the history of protein frauds, including the 2007 and 2008 melamine incidents and recent ones in Brazil and India. It will introduce the risks and challenges about verifying protein ingredients. Strategies including supply chain management and sophisticated testing methods/standards will be discussed. The presentations will introduce the latest advancements in protein identification and purity determination. The applied matrices include dairy proteins/ingredients, soy, pea, rice, nut proteins, etc. Methods, including amino acid profiling by UHPLC, LC-MS peptide mapping, whole-protein LC-MS, gel electrophoresis, etc., will be presented and discussed. In addition, new developments in protein quality evaluation tools including protein and amino acid digestibility, amino acid requirement patterns, applications of new protein formulations, and the relation with nutrition labeling will be introduced.

Low-Energy Electron Beam (LEEB) as a Cost-Efficient and Sustainable Technology to Deliver High-Quality and Microbiologically Safe Ingredients and Products

Speakers:

Christoph Reh – Portfolio Manager, Nestle Research

Sophie Zuber – Nestle Research

Georgios Akepsimaidis – Technology Application Manager, Buehler

Suresh Pillai – Texas A&M



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Ramona Nitzsche, DIL – *German Institute of Food Technologies*

Heikki Aisala – *VTT, Finish Institute of Technology*

This session will bring together major players from academia, the technology provider side and the food industry to discuss the potential of an emerging technology, LEEB (low-energy electron beam), to revolutionize the way ingredients are processed to deliver high-quality and microbiologically safe ingredients and products. The technological background of high (HEEB) and low (LEEB) energy electron beam irradiation will be comprehensively covered, including technical explanations around equipment manufacture and application range. Newly generated results on the electron beam susceptibility of pathogenic bacteria and viruses on fruit, seed, and spice matrices will be shared.

Safe Transportation of Human and Animal Food: Best Practices

Speakers:

Kevin Smith, MPH – *Senior Advisor for Food Safety, FDA/CFSAN*

Aparna Tatavarthy, Ph.D. – *Microbiologist, FDA/CFSAN*

David Fairfield – *Senior Vice President, Feed, National Grain and Feed Association*

Donald Durm – *Vice President, Global Cold Chain Alliance*

This session will include speakers from the federal government, different industry sectors, and points along the food supply chain. Attendees will learn about current best practices for cleaning and sanitizing vehicles and transportation equipment, vehicle loading, preventing cross contact of allergens, bulk transportation, and providing adequate temperature controls during transport. Industry initiatives that recognize companies that conform to best practices, information exchange between firms, and the need for record keeping will be discussed. FDA personnel will provide information about rule compliance, implementation, and the relationship to other federal and state food safety regulations.

What Have We Learned From Cyclospora Outbreaks?

Speakers:

Qing Wang, PhD – *Sr. Research Science Analyst, Sealed Air*

Sara Gragg, PhD – *Associate Professor, Kansas State University Olathe*

Ynes Ortega, PhD – *Associate Professor, University of Georgia*

Anup Kollanoor Johny, BVScAH, MVSc, PhD – *Associate Professor, University of Minnesota*

Gary van Breda – *Director, Global Food Safety, McDonald's*

Alexandre DaSilva – *FDA*

This session will discuss the characteristics of Cyclospora, how it enters the food chain from farm to consumers, as well as the key challenges and limitations associated with preventing and controlling Cyclospora. Speakers will also provide solutions that could be successfully implemented to protect the food supply throughout the world from Cyclospora. The session will also highlight how technologies, such as blockchain systems, analytical tools, as well as supplier qualification and verification programs, help to protect against Cyclospora outbreaks.



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**Featured Food Safety
and Security Session**

Interpreting Gut Microbiome Research in the Safety Evaluation of Foods and Food Ingredients

Speakers:

Khatera Rahmani, PhD – *Conagra Brands*

Marie Latulippe, MS RD – *Senior Program Manager, ILSI North America*

Joseph Rodricks, PhD – *Founding Principal, Ramboll ENVIRON*

Michael Pariza – *Professor, University of Wisconsin*

This session will explore the current understanding of safety evaluation with respect to modulation of the gut microbiome. Speakers will review current regulatory frameworks and risk assessment paradigms and how they might be translated or applied for the evaluation of foods or ingredients that aim to benefit health through gut microbiome modulation. Speakers will consider how microbiome research pertains to and/or is incorporated into the safety assessment of foods, ingredients, and supplements, and where endpoints are identified in a safety context, as well as engage in discussion on how these endpoints relate to microbiome benefits. The session will explore these questions from various product perspectives: supplements such as probiotics, ingredients that may affect the gut microbiome (both that are and are not intended to target the gut microbiome), and diets or dietary patterns.

Panel: Is Our Food System Harming the Earth? What are We Going to Do About it?

The mass cultivation and production of food have tremendous impacts on the health of our planet. How can we best balance consumer wants and business needs while protecting the future of our planet? This panel and supporting sessions will discuss this important topic and challenge participants to explore new and innovative solutions.

Panelists include:

- **Chris Downs**, General Manager, Crop & Food Science Queensland Department of Agriculture & Fisheries
- **Seth Goldman**, Founder and Chief Change Agent of Eat the Change, Co-founder of PLNT Burger and Chair of the board of Beyond Meat
- **John Robinson**, Partner, Mazarine Ventures
- **Tara Garnett**, EAT Lancet Report Contributor, Founder, Food Climate Research Network Environmental Change Institute, & Fellow University of Oxford Martin School

Sustainability Sessions

Bioactives From Zero Waste Processing of Foods

Speakers:

Fereidoon Shahidi – Professor, Memorial University

Sam Chang, Ph.D. – Professor & Director, Mississippi State University

Deepika Dave – Research Scientist, Marine Institute of Memorial University

Adriano de Camargo – Assistant Professor, University of Chile

This session is designed to address the most recent advances and creative strategies in the development of novel processing methods to maximizing the use of these discards to reach a zero waste outcome and the practical application of knowledge generated in the industry.

Circular Bio-Economy Options for Agriculture: Meeting the Future Nutrient Demand

Speakers:

Claire Schlemme – Renewal Mill

Beth Alcouloumre – Manager, Process Development, International Flavors & Fragrances

Caroline Cotto – Chief Operating Officer, Renewal Mills

Thambaramala (mala) Gamage, Ph D - Senior Research Scientist, CSIRO

Sustainability Sessions

Xueqi Li, MSc – Assistant Director, University of California Davis

Michael Hershkowitz – Global Director, Product Sustainability, International Flavors & Fragrances

This session will demonstrate the challenges in implementing circular bio-economy concepts in different areas of the world and how the challenges are managed to obtain positive outcomes. The discussion will also address how the value adding to underutilized agricultural materials or supply chain losses can be conducted while meeting the consumer demands for nutrient dense ingredients and foods.

Conversion of Food Wastes into Value Added Products

Speakers:

Yan Liu, Ph.D – Associate Professor, Michigan State University

Mauricio Bustamante, Dr. – Professor, University of Costa Rica

Liang Zhang, Dr. – Professor, Jiangnan University

This session will focus on biological conversion technologies needed to utilize food processing wastes for biofuel and value-added food/chemical production. The topics will cover biological processes of waste utilization, field residue management, and system engineering of process design.

Getting the Needle Out of the Plant Food Haystack: Engineering Approaches for Extracting Value From Fruit, Vegetable, Grain, and Nut Co-Products

Speakers:

Pablo Juliano, PhD – Principal Research Scientist, CSIRO

Suvaluk Asavasanti, PhD. – Assistant Professor, King Mongkut's University of Technology Thonburi

Patchanee Yasurin – Lecturer and researcher, Assumption University

Bor-Sen Chiou – Research Chemist, USDA - Agricultural Research Service

Thambaramala (mala) Gamage, Ph D – Senior Research Scientist, CSIRO

Regine Stockmann – Dr., CSIRO

In this session, experts from around the world will present the latest research on engineering approaches to develop new uses for the co-products of fruit, vegetable, grain, and nut products. The focus of the session will begin with a broad overview of the area and will then narrow to case studies of particular crops and products.

Sustainability Sessions

Health, Safety, and Sustainability: Challenges and Opportunities with Today's Seafood Supply Chain

Speakers:

Qinchun Rao, PhD – Assistant Professor, Florida State University

Chengchu Liu, Ph.D – Seafood Technology Specialist, University of Maryland

Tom Brenna – Professor Emeritus of Human Nutrition & Food Science, University of Texas at Austin

Nicholas Ralston, Ph.D. – Research Scientist, University of North Dakota

Jonathan Deeds, Ph.D. – Research Biologist, Food & Drug Administration

During this session, four major challenges will be discussed: (1) the security and sustainability of aquatic food supply chain, (2) seafood nutrition, (3) seafood safety including seafood fraud, and (4) fish and shellfish allergies. A diverse group of presenters will share their research experiences and opinions and give a broad perspective to the proposed topics. Through those presentations and discussion, some useful solutions and potential opportunities will be elaborated.

Indoor Growth of Produce: Safety, Sustainability, Health and Beyond

Speakers:

Jitu Patel, Ph.D. – Lead Scientist, USDA-ARS

Brud Hodgkins – Indoor Organic Gardens of Poughkeepsie

Scott Massey – Heliponix

Nitin Joshi, VP – Product Development, DMI/Pizza Hut

In order to feed 9 billion people around the globe food production will need to be increased by 70% before 2050. However, with rapid urbanization the availability of agriculture land and irrigation water is continuously reducing. Alternative farming practices are essential to increase the food production. The hydroponics vegetable industry is well positioned for rapid growth in the United States and elsewhere. Microgreens are a crop that grows well in Controlled Environment Agriculture (CEA). Alternative and indoor farming practices such as hydroponics, aquaponics, aeroponic, microgreens etc. are the need of the day and are becoming more and more popular. Practical perspectives of indoor grown produce, their safety and sustainability aspects will be discussed at this session.

Leveraging Food Value-Chain Sustainability: Food Loss Mitigation Through Innovative Circular Bioeconomy Concepts Harnessing Microalgae and Insect Biorefineries

Speakers:

Sergiy Smetana, Ph.D. – Head of Food Data Group, German Institute of Food Technologies

Alexander Mathys, Prof. Dr. – Head of Sustainable Food Processing Laboratory, ETH Zurich

Iris Haberkorn – PhD candidate, ETH Zurich

Jonathan Cammack, Ph.D. – Chief Operating Officer, EVO Conversion Systems, LLC

Mark Barthel – Special Advisor, Fight Food Waste CRC

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With a prospected world population of around 9.7 billion people by 2050, there will be a voracious demand for food, necessitating an increase in global food production by 50%. The core of this session is the mitigation of food-loss highlighting potentials of novel approaches relying on technological advances and innovative raw materials from microalgae and insects, focusing on CE creation. The session will also cover critical views of the suggested process innovations by holistic life cycle assessment (LCA), to evaluate the suggested solutions on a multi-parameter base and aid in unveiling critical points with optimization potential in terms of improved food value-chain sustainability and eco-efficiency.

Leveraging Protein Waste with Novel Products, Processing, and Packaging Solutions

Speakers:

Sergiy Smetana, Ph.D. – Head of Food Data Group, German Institute of Food Technologies (DIL e.V)

Clyde Don, Dr – Managing Director, CDC FoodPhysica

Jing Zhao, Ph.D – Assistant Professor, California State University

Claire Sand, Ph.D. – CEO; Adjunct Professor, Packaging Technology and Research, LLC

Gerardo Morantes – Bühler Group

Daniel Pleissner, Dr. Prof. – Prof., Leuphana University of Lüneburg; ILU

Jesus Fernandez-Bayo, Dr. – Assistant Professional Researcher, University of California, Davis

This session will cover multiple ways to preserve, efficiently process and return proteins in the food system. Five internationally renowned experts will present on advances for protein loss reduction along the supply chain; concepts for returning valuable proteins to supply chains; achievements in processing of protein side-streams; and upcycling and valorization of low-value nitrogen sources back into the food system.

Perceptions, Facts, and Technology: How They Influence the Alternative Protein Marketplace

Speakers:

Stacy Pyett, PhD – Program Manager, Wageningen University and Research

Joanna Clifton – Innova Market Insights CO

Bradley Bolling, Ph.D – Assistant Professor, University of Wisconsin

Mark Fahlin – Business Development – Dairy, Plant-based, Meat Alts, Cargill Inc.

Kartik Shah – Technology Principal SAI, Sargento Foods

Lindsay Springer, PhD – Senior Scientist, Steuben Foods

Consumers, their food preferences, and their view of ingredients and their attributes are critical in navigating this complex space and arriving at a successful product launch and maintaining a robust new product pipeline. The speakers in this session will share their expertise on how the alternative protein market can impact on environment and nutritional profiles, as well as their acceptance overall around the globe and how this information can be leveraged by the food industry.

Sustainability Sessions

Plant-Based Eating Patterns vs Plant-Based Foods: Why Distinguishing Between the Two Is Vital for Industry, Research, and Consumers

Speakers:

B. Pam Ismail, PhD – Professor, University of Minnesota

Moises Torres-Gonzalez, PhD – Vice President, Nutrition Research, National Dairy Council

Julie Hess, PhD – Director of Scientific Affairs, National Dairy Council

Laurie Demeritt – CEO, The Hartman Group

If plant-based is the future, the food sector needs to figure out what that means. In this session, a panel of academics and food industry professionals will address the distinctions between 'plant-based' eating patterns, protein sources, and beverages from food science, nutrition science, and consumer trends perspectives to give attendees a broad understanding of what 'plant-based' means to different sectors of the food system.

Protein Production, Consumption and Sustainability: Consumer, Academic and Industry Insights

Speakers:

Joseph Clayton – CEO, International Food Information Council

Alison Van Eenennaam, M.S. Ph.D. – Cooperative Extension Specialist, University of California, Davis

Tamika Sims, PhD – Director, Food Technology Communications, International Food Information Council

Meng Li – Just Inc.

Justin Ransom, PhD – Senior Director, Tyson Foods

The way consumers are buying and consuming their protein from both plant-based and animal resources is quickly evolving. While the industry looks to meet consumer demand for more protein sources, there is also the call for more sustainable food production practices. In this session, we will explore consumer data about perceptions on environmentally sustainable and healthy diets, take a closer look at food production matching up with consumer demand both with a plant-based and animal protein lens and will also take a holistic look at the environmental impacts of protein production now, and in the future.

Plastic Packaging for Food and Beverages: Challenges and Opportunities to Achieve Sustainability

Speakers:

Ziyet Boz – Assistant Professor, University of Florida

Preeta Datt – Sustainability Platform Lead, Sealed Air Corporation

Sandi Child – The Association of Plastic Recyclers

Maxine Roma – Principal Scientist, The Kraft Heinz Company

Numerous large food companies have made public commitments to achieve greater packaging sustainability. One of the largest challenges to these commitments is developing packaging sustainability strategies for single-serve plastic packaging used for numerous foods and

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beverages. Innovations in plastic material design, investments in plastic recyclability infrastructure, and consumer education on recycling will be pivotal to achieving sustainability targets. This session will provide insight on the value chain of recycling single use plastic packaging, including topics on use of recycled plastic material for food packaging, design of packaging to ease recyclability, and efforts to expand and promote plastic recycling industry through improvements to supply, demand, and quality..

Sustainability Assessment in Food Systems: Life Cycle Analysis Principles, Critical Tools, and Recent Advances

Speakers:

Maxine Roman, PhD – *Principal Scientist, The Kraft Heinz Company*

Ziyne Boz – *Assistant Professor, University of Florida*

Sergiy Smetana, Ph.D. – *Head of Food Data Group, German Institute of Food Technologies*

Claire Sand, Ph.D. – *CEO; Adjunct Professor, Packaging Technology and Research LLC, MSU, CalPoly*

Agnieszka van Batavia – *Packaging Sustainability and Regulatory Advisor, The LCA Centre*

This session will present the historical context, implementation strategies for varying levels within the value chain, recent data analytics and instrumental analysis, production, processing, and formulation of various food groups.

Sustainable Vegetable Supply: From Farm to Table

Speakers:

Xiaofen Du, PhD – *Assistant Professor, Texas Woman's University*

Erin Roskopf, PhD – *Research Microbiologist, USDA-ARS*

Yiqun Weng, PhD – *Research Geneticist, USDA-ARS*

Francesco Di Gioia, PhD – *Pennsylvania State University*

Anne Plotto, PhD – *Plant Physiologist, USDA-ARS*

Mary Jo Feeney, MS, RDN, FADA, FAND – *nutrition consultant, Mushroom Council*

In this session we will cover the modern technologies and innovation used in the value chain of vegetable production to maintain a sufficient supply for global population. The presentation will include topics of plant breeding, horticulture, postharvest, and vegetable flavor and nutritional quality.

Swimming Toward a Better Future: The Current Landscape of Plant-Based and Cultivated Seafood Innovation

Speakers:

Claire Bomkamp, PhD – *Senior Scientist Cultivated Seafood Specialization, The Good Food Institute*

Lou Cooperhouse – *President & CEO, BlueNalu*

Maisie Ganzler – *Chief Strategy and Brand Officer, Bon Appetit*

Sandhya Sriram PhD – *CEO and Co-Founder, Shiok Meats*

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Kevan Main, PhD – Senior Scientist & Program Manager, Mote Marine Laboratory

Cameron Semperb – University of Calgary

Seafood is generally recognized as a healthy protein source and is a dietary staple in many parts of the world. However, both commercial fishing and aquaculture have environmental and animal welfare challenges. These concerns necessitate a change in how we produce seafood. Scientists in academia and industry are investigating new approaches such as plant-based and cultivated seafood. In this panel, we will hear from leaders in cultivated seafood as well as in industrial food service and sustainable aquaculture.

The Future of Food Packaging: Perspectives on Regulations and Economic Feasibility to Meet Sustainability Goals

Speakers:

Maxine Roman, PhD – Principal Scientist, Kraft Heinz Company

Ziyneet Boz – Assistant Professor, University of Florida

Melvin Pascall – The Ohio State University

Victor Bell – President, Environmental Packaging International

Dylan de Thomas – VP of Industry Collaboration, The Recycling Partnership

Emily Tipaldo – More Recycling

This panel discussion will provide the audience with insights on the impact of recent packaging waste legislation on the food industry. Topics of discussion will include the global legislation landscape to promote packaging sustainability, extended producer responsibility and its impact on product costs, design of products for reuse, recyclability, and materials reduction to ease incorporation into the recycling industry, and corporate sustainability goals. The panel will include experts in global packaging, packaging waste, and packaging recycling.

Designed to Disappear: The Future of Sustainable Food and Beverage Packaging

Speakers:

Dorota Bartosik – *Senior Manager, New Ventures Marketing, MonoSol*

How to deliver single serving and on-the-go convenience consumers crave without creating a pile of packaging? Biomimetics may hold the answer. How does nature do single serving? With biodegradable or edible wrappers. Bananas, oranges, nuts, all these foods come prepackaged in protected single servings for our convenience. Due to the film's water-solubility, it's an ideal packaging substrate for products consumers add to liquids. Beverage powders, oatmeal packets, instant coffee, and flavor additives are just some examples of this application. PVOH has the capability to synergize the conflicting trends of convenience and sustainability in the food and beverage industries.

Personal and Planetary Health: Consumer Perspectives on Plant-Based Protein

Speakers:

Kris Sollid, RD – *Senior Director, Nutrition Communications, IFIC Senior Director of Nutrition Communications*

Every so often, something once described as a "food trend" has staying power. In 2020, there is no better example of this than innovations in plant-based protein products. Alternatives to animal meat are nothing new (the original veggie burger dates back decades), but more recently a new generation of plant-based protein products has exploded on the food scene, distinguished from their predecessors by the intent to mimic meat's taste and texture. We know there is buzz, but until recently, we didn't know a lot about the full consumer experience with newly developed plant-based protein products. Who's eating them? What are their perceptions of the environmental impact, healthfulness, nutrition labels and ingredients of plant-based protein compared to meat? From September 2019 through March 2020, the International Food Information Council (IFIC) conducted three separate consumer research projects to answer these questions. This presentation will highlight IFIC's findings on consumer perspectives toward plant-based protein and discuss how they align with existing evidence related to sustainability, food science, and nutrition.

Stronger Together: Farmers and Food Companies in the Face of Climate Change

Speakers:

Hayley Elkin

Panelists will discuss revenue growth opportunities that stem from collaborating with farmers - as well as the AgTech innovations, such as supply chain traceability and carbon sequestration, being adopted by today's farmers.

Turning 'Greenness' Into Green: Strategies That Support Environmental Sustainability and Market Success

Speakers:

Jonathan Kershaw, PhD – *Assistant Professor, Bowling Green State University*

During this interactive presentation, numerous evidence-based strategies to promote environmentally sustainable products will be discussed as well as specific examples from ongoing research on acceptance of aquaponic products.

Upcycling: A Return to Basics Speakers:

Speakers:

Rich Troyer, CEO of Comet Bio – *Comet Bio*

Loula Merkel – *VP of Business Development, Comet Bio*

Nathalie Plundrich, MS, PhD – *Food Technologist, SinnoVita*

Turner Wyatt – *CEO, Upcycled Food Association*

Amanda Vargochik – *VP of Innovation, SinnovaTek*

Turner Wyatt – *Upcycled Food Association*

This session takes a food-technology centered approach to address the issues surrounding food waste and nutrition. It touches on several relevant and trending concepts including, higher nutrient density, high protein foods, plant-based foods, and phytochemical recovery. Addressing these topics in any meaningful way requires the cooperative collaboration of a variety of stakeholders.



Science and Technology

Panel: Building Food Security into Resilient Cities

By the year 2050, two thirds of the population will live in mega cities. Today's cities are being engineered to be more sustainable, safer, and socially responsible, in pursuit of the promise of resiliency. This panel and supporting sessions will provide opportunities to learn and explore the impacts of key decisions, and how we can all work together to build a more secure food system for the future.

Panelists include:

- **Moderator- Harry Epstein**, p-Chip Corporation
- **Ted Fishman**, Author of China, Inc.
- **Allison Grantham**, Grow Well Consulting
- **Geoffrey Hewings**, UIUC Department of Finance

Science and Technology Sessions

4 New Technologies Transforming Sensory and Consumer Science

Speakers:

William Harwood – Graduate Student, North Carolina State University

Angelina Schiano – Graduate Research Assistant, North Carolina State University

William Russ – Computational Market Researcher, The Institute for Perception

John Ennis, PhD – President, Aigora

Lindsay Barr, MS – Co-Founder, DraughtLab

Michelle Niedziela, PhD – HCD Research

This symposium discusses four new technologies - app-based data collection, machine learning, alternate data streams, and graph-based knowledge management - currently transforming sensory and consumer science. Each technology is discussed by subject-matter experts grounded in everyday experience as sensory and consumer scientists.

This session will explore:

- Sensory on the Edge: Advances in App-Based Data Collection
- Machine Learning in Sensory: What's New (and What's Not)
- Alternative Data Streams and their Value to Sensory and Consumer Scientists
- How Graph Databases Help Sensory and Consumer Scientists Find New Insights in their Historical Data

Science and Technology Sessions

Advancements in Novel Processing and Packaging Technologies for Shaping the Future of Food Manufacturing and Consumption

Speakers:

V.M. Balasubramaniam, Ph.D. – Professor of Food Engineering, The Ohio State University

Ashim Datta – Professor, Cornell University

Maxine Roman, PhD – Principal Scientist, The Kraft Heinz Company

Marcia Walker, PhD – Vice President, The Tofurky Company

Tatiana Koutchma, PhD – Research Scientist, Agriculture and Agri-Food Canada

Claire Sand, Ph.D. – CEO; Adjunct Professor, Packaging Technology and Research

Advances in food processing, packaging, and digital technologies are enabling the food manufacturing industry to satisfy consumer demand for convenient, safe, sustainable, and healthy processed foods. This session features the highly coveted division lecturers from the Food Engineering, Nonthermal Processing, and Food Packaging divisions, highlighting how the research advances and innovations in food engineering, nonthermal processing, and packaging technologies that help to shape the future of the food manufacturing industry. For example, consumer demand for healthy food and beverage products has spurred a growth in the plant-based protein foods.

Bridging Science and Practice to Accelerate Innovation and Integration of Ultraviolet Light Technology and LEDs in Food Processing

Speakers:

Tatiana Koutchma, PhD – Research Scientist, Agriculture and Agri-Food Canada

Ankit Patras, Ph.D – Associate Professor, Tennessee State University

Mohammed Farid, PhD – Professor, University of Auckland

Phyllis Posy – PosyGlobal, Israel, Jerusalem

Danny Bayliss, PhD – New Technology Research Team leader, Campden BRI

This session will discuss the current state of technology commercialization and international regulatory environment, knowledge gaps in product and process development, and validation standards that need to be addressed to accelerate UVC technology implementation. Also, the essential differences in approaches in UVC treatment of water, beverages, and food surfaces, including process requirements and existing practices, will be discussed and have to be considered for successful UVC process development and validation. This will include major requirements for UVC preservation of dairy products, various beverages and solid foods, principles of establishment of equivalent preservation UVC dose, quality and toxicological effects, challenges of process validation and effective designs of UVC commercial systems.



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Coproducts from Pulse Ingredients Processing: Valorization and Application in Food Products

Speakers:

Elena De La Peña, PhD – Business Scientist, Ingredion

Susan Tosh, PhD – Director, University of Ottawa

Luca Serventi, Ph.D. – Lecturer, Lincoln University New Zealand

Nagul Naguleswaran, Ph.D – Sr. Associate, Research, Ingredion

Rana Mustafa, Ph.D. – Professional Research Associate, University of Saskatchewan

Janelle Courcelles, MSc – Senior Manager, Food Innovation & Marketing, Pulse Canada

This session will discuss recent research advances on how to valorize coproducts such as starch, fibers, steep water, and aquafaba from pulse seed processing and their potential applications in food products. At the end of this symposium the audience will have learned the importance of coproducts from pulse ingredients processing as valuable raw materials to include in certain food applications.

Flavor Associated Applications in Health and Wellness Products

Speakers:

Jun Yang, Ph.D – Principal Scientist, PepsiCo

Juyun Lim, PhD – Professor, Oregon State University

Xiaofen Du, PhD – Assistant Professor, Texas Woman's University

Jin Zhou, Ph.D – Firmenich (USA)

Zareena Valappil, PhD – Archer Daniels Midland Company (ADM)

Danting Yin – Scientist, Firmenich (China)

Health and wellness of food and beverages is a broad subject that continues to evolve and be of increasing interest to both consumers and manufacturers. Consumers' interest in healthy lifestyles and their demand for healthier products and services continue to escalate. Flavor plays an important role in the health and wellness arena in flavored consumer goods. This could include the fundamental understanding of smell and taste association and the impact on sugar reduced beverages and drinks (presenter 1), flavor associated refreshing perception and application in sugar reduced beverages (presenter 2), plant-based products and full-service wellness offerings (presenter 3), and clean labels in general (presentation 4) and used in alcoholic free beer (presenter 5). These are the latest trends happening for flavor and food industry. This symposium will cover scientific aspects and industrial practices of all five topics.



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Food Structure Design: Understanding of Food Microstructures

Speakers:

Owen Jones – *Purdue University*

Alejandro Marangoni, Ph.D. – *Professor and Tier I Canada Research Chair, University of Guelph, Canada*

Jinping Dong – *Principal Scientist, Cargill*

Andrew Gravelle, MSc – *PhD Student, University of Guelph, Canada*

Understanding of microstructure and functionality correlations leads the recent trends in food research. Employing a wide range of tools to characterize and understand food microstructure is essential in food structure design, and this symposium aims to bring scientists and researchers together to share their findings and learnings in this area. Although microscopy and microanalysis techniques are constantly used by food scientists, many challenges are faced in this field due to the highly complex nature of the food, as well as the totally different intent in which these techniques were originally developed to work. This symposium will showcase works from the food industry and academia where microscopy-related techniques are practiced to characterize food microstructures and to draw their relationship with functionalities. Topics include, but are not limited to, light, fluorescence, electron, ion, X-ray, and spectroscopy based microscopy techniques with their applications in food research.

Improvement of Protein Functionality by Protein Glycation Using the Maillard Reaction

Speakers:

Gabriel Davidov-Pardo, Ph.D – *Assistant Professor, Cal Poly Pomona*

Sarah Caballero – *Student, Cal Poly Pomona*

Iris Joye – *Assistant Professor, University of Guelph*

Marco Ceballos-Fabela – *Grad Student, Instituto Tecnológico de Sonora*

This session will consist of one introductory presentation in which the Maillard conjugation will be introduced to the audience, covering its principles and different methods to create and evaluate Maillard conjugates. The other two presentations will cover practical cases in which the Maillard reaction has been successfully used to improve the functionality of animal- and plant- based proteins without compromising their safety.

Ingredient and Formulation Design for Healthy Bakery Products

Speakers:

Bruce Hamaker – *Professor, Purdue University*

Joost Blankestijn – *Program Manager, Wageningen Food & Biobased Research*

Stefano Renzetti, Dr. – *Sr. Scientist, Wageningen Food & Biobased Research*

Mario Martinez-Martinez – *Assistant Professor, University of Guelph*

In this session the latest insights in reversed engineering approaches to the design of food formulations and food ingredients will be provided. An integrated view on multidisciplinary aspect of food design, combining quantitative molecular and material science aspects of food structuring



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with the digestibility and physiological responses of the structured food matrices, will be presented. These approaches hold promise for the development of food ingredients and food products with targeted nutritional benefits and towards a shift to nutrient dense, sustainable diets. Special attention will be given to bakery applications and the development of sustainable, plant-based ingredients such as low digestible starches and dietary fibers with targeted prebiotic effects.

Novel Applications of Emerging Powder Technology

Speakers:

Jeff Foss – *Principal Scientist, ZoomEssence*

Kiyul Cho – *Principal Emulsion Scientist, ZoomEssence*

Tonya Armstrong, B.S. and M.S. Food Science – *Senior Applications Scientist, Grain Processing*

Starla Paulsen, MS Food Science – *Food Industry Consultant, Protein Science Lab*

Even with the recent advancement of powder technology for food applications, there are still the challenges and opportunities to meet the consumers' demands for highly nutritious, convenient and great tasting foods. This session will discuss the use of newly developed powder technologies to address the challenges and introduce the innovative tools for manufacturing high quality food products. Details of the utilization of a novel low temperature drying technology to concentrate, encapsulate and stabilize flavor actives to make nutritional bars rich with authentic flavor and aroma will also be discussed.

A Novel Workflow That Will Change Our Understanding of How Food Ingredients Impact Our Health

Speakers:

Geoffrey Smithers, PhD – *Founder & President, GWS Food Industry Consulting Services*

Louise Bennet PhD – *Professor, Monash University*

Mark Buecking PhD – *Head of Department, Fraunhofer IME*

Bernad Goeckener – *Research Associate, Fraunhofer IME*

Margaret Murry, PhD – *Research Fellow, Monash University*

John Haynes – *Stem Cell Biology Group Leader*

The food supply chain embodies a challenging array of variables for systematic study. A particular challenge is tracing the fate of specific compounds through processing and cooking environments and then through metabolic processes, once the food is consumed, to evaluate the safety or bioactivity. We have developed a unique work-flow for tracing the fate of compounds of interest through processing, preparation and/or in-body utilization. It starts with radio-labelling the target compound with benign carbon-14, which permits the detection of degradation compounds and



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metabolites of the target compound through ultra-high sensitivity LC-MS analysis. Following the identification of specific metabolites, the workflow includes the option for chemical synthesis of metabolites, enabling deep insight into molecular nutrition and food safety aspects.

This workflow is ready to support the food industry to create healthy food innovation opportunities and accelerate understanding of the complex food and health paradigm. More information can be found in our Food Technology Magazine article (Research Tool Helps Validate Efficacy of Functional Foods). This session will explore:

- Radiokitchen: tracing food ingredients using 14-C
- Investigating the conversion pathways of food ingredients
- A unique workflow for tracing the health impact of nutrients in food
- Using stem cell systems to investigate food metabolite biology and safety

Overcoming Common Challenges with Emulsions: The Science Behind the Solutions

Speakers:

David McClements, PhD – Professor, University of Massachusetts, Amherst

Alireza Abbaspourrad – Assistant Professor, Food Chemistry and Ingredient Technology, Cornell University

James Smoot – Senior Manager, Innovation and Commercial Development Group, Tate & Lyle

Yong-Cheng Shi, Ph.D. – Professor, Grain Science & Industry, Kansas State University

Zheng You, Ph.D – Principal Scientist, Tate & Lyle

Ehsan Jenab, PhD – Senior Research Scientist, Tate & Lyle

Emma Gregory, RD – Senior Account Executive, FoodMinds

Food emulsifiers have always been critical for product development to meet product performance and consumer sensory expectations. They ensure that non-dairy creamers are insensitive to water hardness, they create the desirable cloudy appearance in juices and sports drinks, and they're essential for the thick, creamy texture in sauces and dressings, and much more. However, the perfect emulsion can be tricky for food formulators to achieve for a variety of reasons. Challenges that food scientists often encounter with emulsions include emulsion stability, oil-loading capacity, preventing oxidation, bioavailability of encapsulated active ingredient, labeling requirements, the ease-of-use by customers, and so on. This session leverages the expertise and experience of texture scientists to equip food formulators with the tools and knowledge they need to anticipate and trouble-shoot problems as well as identify solutions.



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Plant-Based Foods: Designing Ingredient, Formulation, and Consumer Opportunities from the Ground Up

Speakers:

David McClements, PhD – Professor, University of Massachusetts

Alejandro Marangoni, Ph.D. – Professor and Tier I Canada Research Chair, University of Guelph

Jason Stokes – Professor, The University of Queensland

Michael Leonard – Chief Technology Officer and Senior Vice President, Motif FoodWorks

Vivek Sharma, PhD – Associate Professor, University of Illinois Chicago

Randy Ewoldt, PhD – Associate Professor, University of Illinois

Katy Geguchadze – Bateman Group

The market for sustainable alternative protein food products exceeds \$4 billion in the US, with significant potential for growth. Plant-based milks already comprise over 13% of the dairy market, while plant-based meat alternatives continue to gain momentum and awareness with consumers and investors. However, significant hurdles remain for plant-based food manufacturers to create products that are equally compelling as their meat or dairy counterparts. The emergence of synthetic biology as a tool to precisely manufacture functional, animal-free food ingredients in a sustainable way is demonstrating high potential to deliver attractive formulation options to our industry. In addition, the application of advanced physicochemical characterization techniques to food systems is helping generate significant insight into the hierarchical material behavior of food and how key properties influence the eating experience. These combined approaches provide the opportunity to significantly improve our ability to design and deliver superior plant-based foods to consumers.

Protect the Power of Flavors

Speakers:

Chin-Ping Su – Technical Manager- Flavor Delivery, FONA International Inc.

Sara Risch, Ph.D. – Director R&D, Popz Microwave Popcorn

Mabel Chacko – Project Leader - Technical Development, Ingredion Incorporated

Robert Sobel – Vice President of FONA, FONA

Derek Holthaus – TIG Gums

The food and beverage segment is significantly driven by consumer trends. One relevant trend is the growing number of experiential consumers who are seeking exotic flavors and colors. Another is the ever-increasing number of consumers who are concerned about natural and cleaner ingredient offerings. These trends require food and beverage manufacturers to adapt and create new formulations where flavors are key ingredients to their success. However, creating a successful new product isn't solely about compounding the ideal flavor profile; maintaining freshness and stability of the flavor throughout its shelf life is also critical, and formulation, raw materials, and packaging play equally important roles in that regard.



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Protein Processing 2.0: Next Gen Scalable Technologies for Advancing the Functionalization and Sustainable Production of Protein Ingredients

Speakers:

Nitin Joshi – VP- Product Development, DMI/Pizza Hut

Lloyd Metzger, Ph.D. – Professor, South Dakota State University

Rohit Kapoor, Ph.D. – Vice President Product Research, National Dairy Council

Hari Meletharayil – National Dairy Council

Jayendra Amamcharla, Ph.D. – Associate Professor, Kansas State University

Federico Harte, Ph.D. – Professor, Pennsylvania State University

According to the 2019 Innova Insights, global new product launches with protein claims have grown at a whopping 21% (CAGR) since 2014. Protein ingredients play an integral role in food products by providing nutrition, taste, and functionality, which are all key for a great consumer experience. Moreover, sustainable food production is paramount to address the challenge of providing valuable nutrition to the growing global population. This symposium will survey the current food protein processing landscape and highlight emerging, cutting-edge, and at the same time immensely scalable technologies such as micro- and nano bubbles, high pressure jet, and high solids spray drying that will shape the future of protein processing to deliver highly functional and more sustainably produced high protein ingredients to serve today's evolving consumer needs.

Shelf Life: The Cinderella of the Sensory World, Tips, Tricks and Thought Provokers to Turn the Mundane into the Glass Slipper of the Company

Speakers:

Janet McLean – Global Director Sensory and Consumer Guidance, Diageo

Terry Work – Principal, Consultant

Dianne Gil – Diageo

Julia Tyrpin – Director Sensory North America, Griffith Foods

Allison Casto, Masters in Food Science – Senior Investigator & Manager, Givaudan

This panel discussion will start by laying out the current best practices to consider when setting up a shelf life program in your company taking into consideration available resources needed to execute, portfolio size you need to manage, storage conditions your products require, the end consumer/customer, and product preparation, along with the business risks your company is willing to assume. We will follow by hearing from three seasoned professionals working across various industries to share their current programs and present real-life challenges that they face. These professionals will span the food, beverage, and ingredient/flavoring industries as each face their own set of challenges.



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The National Bioengineered Food Disclosure Standard: A Discussion of Regulatory Requirements and Testing Methodology

Speakers:

Lakshmanan Ramamoorthi, PhD – *Senior Technical Advisor, United States Department of Agriculture*

Edwin Pearce Smith, Mr. – *Laboratory Manager, Eurofins GeneScan*

Kadriye Hieronymi – *Scientist, Archer Daniels Midland Company (ADM)*

Bill O'Connor – *Vice-President and General Counsel, Heartland Food Products Group*

On July 29, 2016, Public Law 114-216 amended the Agricultural Marketing Act of 1946 (7 U.S.C. 1621 et. seq.) (amended Act), to require USDA to establish a national, mandatory standard for disclosing any food that is or may be bioengineered with a mandatory compliance date of January 1, 2022. There are several ways to determine whether a food or ingredient contains detectable modified genetic material. One of the most commonly used methods is based on genetic DNA analysis, such as Polymerase Chain Reaction (PCR). This session includes speakers across industry and government: a USDA speaker will discuss an overview of the Standard and acceptable testing method selection; a laboratory manager will discuss different testing methodologies available to industry along with accreditation and an international perspective; and, a scientist will discuss testing methodologies for different ingredients and how industry is preparing to implement the Standard.

The NOVA Disruption: A Call-to Action for the Food Industry. An Explanation of the Issues Arising from the NOVA Classification and How to Counter them with Science and Sensibility

Speakers:

Roger Clemens, DrPH, CFS - *Adj Professor, USC School of Pharmacy*

Kantha Shelke, Ph.D., CFS - *Principal / Sr. Lecturer, Johns Hopkins University*

Susana Socolovsky, Ph.D., CFS - *President, PentaChem*

Julie Jones, PHD - *Professor emerita /consultatnt, College of St. Catherine*

The NOVA movement classifies processed foods into four categories (unprocessed or minimally processed foods, processed culinary ingredients, processed foods, and ultra-processed foods and drinks) based on level and purpose of food processing but not on nutritional value, which matters most to health and wellness. The result is disruption in practically every sector of the food industry because of unfounded skepticism of the value of processed foods and a misguided belief that these so-called 'ultra-processed foods' contribute to chronic non-communicable diseases, and even cancer. Despite scientific evidence over the course of the last century of the benefits of processing such as enhanced food quality, removal of potential innate toxins, and improvement of nutrient bioavailability NOVA proponents state that packaged foods are far from a solution, and actually contribute to unhealthy dietary patterns that lead to poor health. The proposed session is a call-to-action for food scientists and to all stakeholders in the food industry at the helm of being disrupted by emerging misguided regulations along with suggestions of steps for each stakeholder to confront the challenge of disruption and help mitigate the risks of unintended consequences.



Creating the Next Big Meat Analogue: An Extrusion Demonstration on Meat Analogue Production

Speakers:

Ryan Kowalski – *Food Extrusion Specialist, C.W. Bradende*

James LaPenna – *C.W. Brabender*

Alternative meat products have been taking the market by storm over the past couple years. While big name players have seen success in the market, multiple small and start-up companies have also entered into the meat alternative space. In doing so additional demand is being created for development of texturized protein to use in meat alternative products.

In this session, we will briefly explore the challenges extrusion of these new texturized protein presents and provide a demonstration of a soy protein concentrate that has not previously been extruded. Utilizing the IFT virtual platform, we will approach the texturized protein development in a way that an extrusion product developer would. We will condense a half a day worth of development into a rapid demonstration that shows how quickly novel texturized proteins can be created.

This demonstration will be done on a lab scale and we will seek to develop a dry texturized product that can be used as a base for multiple meat analog products. Additionally, before the demonstration we will go over what the key differences are in texturized protein types that product developers have identified so far.

In doing so, this demonstration hopes to provide building blocks that developers new to the world of texturized proteins and extrusion can utilize to further advance the rapidly expanding field of meat alternative products and ingredients.

How Will Artificial Intelligence Impact a Food Technologist's Role?

Speakers:

Mandee Richards

Heath Branum – *Product Manager*

Eric Krum

Artificial intelligence (AI) solutions can play a pivotal role in significantly improving the success of new and seasonal products. AI can be used to analyze these data points and provide direction for new product development and the go-to-market strategy for product launches. Buying behaviors and customer sentiments help identify common characteristics of products that have succeeded versus those that have failed. And, depending on the access to outside data, competitive and emerging market intelligence could even be leveraged to help gain market leadership. Join this session to understand how AI could change the way food technologists ideate and partner with their marketing team to innovate, grow market share, and increase customer loyalty.



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IFT **NEXT** **Featured Science & Technology Session**

Feed the Marketing Machine

Speakers:

Brian Bennett – *President,*

Today's digital world provides endless opportunities for professionals to tell their story, connect with customers, and generate sales. Ultimately, we have the opportunity to impact the global food system and make money doing it. While many know that to be true, having the capability and confidence to make this happen – that is another story. When it is happening on a regular basis you have a functioning "marketing machine."

Every company is in a different place on the vast spectrum of digital marketing. Most have parts and pieces in place. They represent investments that haven't produced a significant or measurable return – and most don't know why. They don't have a functioning machine. This presentation will provide the key steps to help businesses of all sizes in the food industry understand the true potential of digital marketing and assemble the right systems and strategies.

Brian Bennett, President of STIR Advertising & Integrated Messaging, will walk through a step-by-step process to building a marketing machine that is tailored to smaller businesses. The audience will leave with a far better understanding of what can and must be done to feed the machine and maintain a healthy business for years to come.



Innovation

Panel: Stop Wasting Waste – Upcycling Our Future

Technology makes it possible to track, trace, and transform our trash into things we need. This panel and supporting sessions will focus on new ways of preventing waste, and upcycling ingredients and packaging to make our food system more sustainable.

Panelists include:

- **Sanne Stroosnijdr**, Wageningen Univ. & Research
- **Jeff Daniel**, Blueflux Power
- **Sotiris Bantas**, Centaur Analytics

Innovation Sessions

2025, the Third Wave of Plant-Based Eating: What to Expect, What Consumers Want, and How the First, Second, and Third Wave Ingredient Enablers and Brands Will Respond

Speakers:

Katie Maloney, PhD – *Innovation Manager, Novozymes*

Julie Mann – *Ingredient*

Andy Seaberg – *Senior Director R&D, Ripple Foods*

Barb Stuckey – *President and Chief Innovation Officer, Mattson*

Over the last decade the plant-based sector has transitioned from niche to mainstream, showing a staggering growth of over 30% in the last two years. This session will reference proprietary Mattson consumer data to articulate the motivation for initial trial, repeat purchase, frequency of purchase, and attributes that drive liking. The data will show the differences between omnivores, flexitarians, vegetarians, vegans, and early adopters in this product space. Mattson predicts that the plant-based space will soon see a Third Wave of evolution, similar to the evolution of coffee driven by transparency and cleaner product labels. In this symposium, we will use this data to predict what this evolution will entail and hear from brands their pathways and solutions towards the next generation of products.

Alternate Protein: Cultivated Seafood and Animal-Free Dairy Proteins

Speakers:

Claire Bomkamp, PhD – *Senior Scientist Cultivated Seafood Specialization, The Good Food Institute*

Lou Cooperhouse – *President & CEO, BlueNalu*

Ravi Jhala – *Head of Food Department, Perfect Day Inc.*

Angela Ichwan – *Sr. Director Technical Lead, Ardent Mills*

We will explore why alternative protein is important to our food systems, what technologies are available, who the innovators are in this space and how we can be part of this effort to enhance our food systems. Our speakers will share some resources for researchers, students, industry

Innovation Sessions

professionals and academia. They will share their journeys of their start-ups and organization. Let's learn how Blue Nalu creates cell-based seafood and Perfect Day produces animal-free dairy protein through fermentation and bio-engineering.

Artificial Intelligence and Machine Learning for a Safer, Better, and Sustainable Food Production Ecosystem

Speakers:

Nitin Joshi – VP- Product Development, DMI / Pizza Hut

Martin Wiedmann – Professor, Cornell University

David Barbano, PhD – Professor, Cornell University

Rohit Kapoor, Ph.D – Vice President Product Research, National Dairy Council

Jason Cohen – Founder & CEO, Gastrograph

Hari Meletharayi – National Dairy Council

Jayendra Amamcharla, Ph.D. – Associate Professor, Kansas State University

Food companies that offer innovative products that are safe, sustainable, and that delight consumers will be winners in the marketplace. This symposium will highlight some of the revolutionary technologies that aim to utilize big (quantitative) and thick (qualitative) data from the farm, factory, and sensory insights to offer safe, sustainable, and better tasting products while ensuring speed to market and forward compatibility of the products developed.

Beyond Animals: Are Clean and Protein-Based Alternatives Tackling the Protein Challenges of the Future?

Speakers:

Robert Sevenich, Ph.D. – Research scientist, Technical University of Berlin

Lukas Böcker – PhD student, ETH Zurich

Elisabeth Hoegg – Research Associate / University Assistant, Technical University of Berlin

Lisa Franke – PhD student, Technical University of Berlin

Didier Toubia – CEO, Aleph Farms

Nick Hazell, MEng MA – CEO v2food, v2food

Today's population will rise by 30% until 2050, reaching a global population of 10 billion people. This growth indicates the need of rethinking in society and especially the food industry enabling it to nourish every human on earth. The creation and recent rapid adoption of plant-based- and cell-based meat can be viewed as a triumph of human centered design over ethical or philosophical niche sectors. However, the developing industry has to face some ongoing challenges like high processed plant-based protein to form meat alternatives, the fact that cultured meat is not very sustainable and, moreover, the creation of complex meat structures using cell-based meat proteins. Through surveys and studies of target users, design thinkers are able to step into the users' shoes and specifically develop and/or improve products for the end consumers. Practical results for meat alternatives can be generated using this method. Therefore, the session covered by five talks presents the revolutionary progresses in cultivation of complex meat structures. Further

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texturization of plant-based proteins and the development of plant-based meat focusing on structure optimization and nutrient supply associated with product quality are addressed providing information from research and industry.

Cannabis & CBD Testing Science Primer 2020: Understanding Methodology and Resources Available to Test Cannabis & CBD Food Sample Types

Speakers:

David Schmidt – Executive Director, AOAC INTERNATIONAL

Toby Astill, Ph.D. – Global Market Manager, PerkinElmer

Patrick Bird – Technical Consultant, PMB BioTek Consulting

This session will focus on the analytical challenges of testing cannabis & hemp food samples to allow the growth of the scientific knowledge base. Driven by the widespread adoption of cannabis & hemp products in new medicinal and recreational edible markets, the opportunity for scientists to support this market is significant but must be approached with scientific care as the pitfalls due to the matrix interference, trace level detection requirements and limited standardized methodology make this task challenging. The focus will be placed on the analytical methods and instrumentation required to test for pesticide residues, residual solvents, heavy metals, terpenes, and potency. In addition, time will be spent to highlight the differences between testing samples of different forms such as edibles, concentrates, and beverages.

Cannabis and Hemp: Regulations and Consumer Trends in Canada and the U.S

Speakers:

Martin Hahn, JD – Hogan Lovells US LLP

Carolina Mitchell – Founder and Chief Scientific Officer, Ciencia Labs

Carolina Venditti, Ph.D. – Scientific and Regulatory Consultant, Intertek Health Sciences

Kathy Musa-Veloso, Ph.D. – Senior Director, Intertek Health Sciences

Chandimal Nicholas – Cassels Brock & Blackwell LLP

There is no question that the availability of cannabis and cannabis containing-products has exploded in the marketplace. Regulations pertaining to the legalized use of cannabis and cannabis-containing products can be tricky to navigate, given that many countries have legalized the use of hemp and hemp-containing products, but not cannabis and cannabis-containing products. It is no doubt a confusing topic, not only for consumers, but for industry alike. Canada is the first G7 nation to legalize recreational cannabis under the Cannabis Act and associated Cannabis Regulations. Thus, in this symposium, we will summarize the current Canadian regulations pertaining to cannabis, highlighting the most recent regulations for cannabis edibles. Furthermore, given the legalization of hemp-containing products, but not cannabis, in the United States (U.S.), we will present the current marketplace trends and consumer attributes and expectations that are driving these trends, with a focus on cannabidiol (CBD). Lastly, from an industry perspective, we aim to explore the complexities of marketing hemp-derived extracts containing CBD as a food or dietary ingredient.

Innovation Sessions

Empowering Teams with Effective Tastings

Speakers:

Lori Rothman, CFS, M.S. – Owner, Lori Rothman Consulting

Sarah Kirkmeyer, PhD, MBA, CFS – Sr. Director, Client Partnerships, Insights Now

Michael Nestrud, PhD, AOS – Founder & President, Michael Nestrud Consulting

Christine VanDongen, PhD – Fellow, University of Minnesota Twin Cities

Whether remotely via online video, at a manufacturing facility, or in an R&D lab, the goal of structured tastings (or cuttings) is to build consensus, guide next steps and / or make decisions. However, too often we leave a tasting realizing that we haven't achieved some or all of our desired outcomes. This presentation is for sensory scientists, chefs, product developers, quality scientists and anyone that leads sensory tastings and will provide science-backed processes for helping you achieve your goals. Upon completion you will have all of the tools you need to design and facilitate efficient, impactful group cuttings.

Formulating and Troubleshooting for Innovation: What Are the Best Solutions for Meat Alternative Products?

Speakers:

Zachary Reed, Ph.D. – Senior Associate, Meat Applications, Ingredion, Inc

Deepti Dabas – Principal Scientist, Kalsec Inc.

Misti Toro – Texture Technologies

Poulson Joseph, Dr. – Director, Protein Innovation, Kalsec, Inc.

Saurabh Kumar – Strategic Innovation Director, Corbion - Purac

Tim Knight, Ph.D. – Technical Services, Givaudan

Meat alternative products are rising in popularity among consumers. Today's meat alternative consumers are not only vegetarians, but flexitarians, and those just trying to reduce the amount of meat they consume. Meeting the needs of all consumers is proving challenging, as the different groups have different expectations. Trying to get plant proteins to look like, smell like, and taste like traditional meat products requires true innovation. This innovation can be challenging, to say the least.

Our industry leaders will present formulating and troubleshooting guidelines to help with your meat alternative product innovations. Topics will include texturizing ingredients (plant proteins, starches, hydrocolloids), flavor masking, flavor enhancement, color enhancement, instrumental analysis for texture, and food safety.

Attendees will walk away with a more complete formulating and troubleshooting toolbox that will allow them to innovate at an increased pace while achieving product superiority.

Innovation Sessions

From Protein Nutrition to Bioactive Peptides: Challenges and Opportunities (Part 1)

Speakers:

Jianping Wu – Professor, University of Alberta

Rotimi Aluko – Professor, University of Manitoba

Linda Giblin, BSc PhD – Senior Scientist, Teagasc Food Research Centre

Fidel Toldrá, PhD – Research Professor, Instituto de Agroquímica y Tecnología de

Satoshi Nagaoka – Gifu University

The potential health implication of bioactive peptides is being actively explored worldwide by many researchers and some have already been successfully marketed. Interest in these areas is burgeoning rapidly. This session will cover a range of topics related to both fundamental and applied work on bioactive peptide production (gastrointestinal digestion, fermentation, bioinformatics), bioavailability, bio-transportation, structure and activity relationship, health implication of bioactive peptides, cellular and molecular mechanisms, and opportunities for their commercialization as novel food ingredients.

From Protein Nutrition to Bioactive Peptides: Challenges and Opportunities (Part 2)

Speakers:

Jianping Wu – Professor, University of Alberta

Rotimi Aluko – Professor, University of Manitoba

Elvira de Mejia, Ph.D., CFS – Professor and Director, University of Illinois, Urbana Champagne

This session will cover a range of topics related to both fundamental and applied work on bioactive peptide production (gastrointestinal digestion, fermentation, bioinformatics), bioavailability, bio-transportation, structure and activity relationship, health implication of bioactive peptides, cellular and molecular mechanisms, and opportunities for their commercialization as novel food ingredients.

Global Design of Clean Label Foods

Speakers:

Greg Stucky – Chief Research Officer, InsightsNow

Webb Girard, MSc – Director of Technology, CuliNex

Sarah Kirkmeyer, PhD, MBA, CFS – Sr. Director, Client Partnerships, InsightsNow

Mimi Sherlock – Director Global Strategic Insights for Flavors, International Flavors & Fragrances, Inc.

We have three great talks planned. Greg Stucky will explain global perspectives about clean label and clean living, highlighting insights and statistics gained from a survey of attitudes, beliefs, and behaviors in nine countries including India, US, Canada, UK, Turkey, China, Mexico, France, Germany, and Brazil. This will show differences and similarities across the globe. Mimi Sherlock will showcase an approach for discovering opportunities for clean label innovation. Her case study will show how using an innovative prospective thinking method using LEGO bricks provided a foundation of

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new insights into the unmet desires for clean label products. Webb Girard will add a culinologist's perspective to global innovation of clean label products, and explain how local culture is used to create new opportunities for building sustainable clean label foods.

Laboratory Innovation and Scale-Up of Fortification Technology to Deliver Multiple Micronutrients in Salt

Speakers:

Yao Olive Li, Ph.D. – Associate Professor, Cal Poly Pomona

Oluwasegun Modupe – PhD Candidate, University of Toronto, Canada

Levente Diosady – Professor of Food Engineering, University of Toronto, Canada

Juveria Siddiqui, PhD – Postdoctoral Fellow, University of Toronto, Canada

This panel will highlight recent developments in food fortification technologies, and report on scale-up, technology transfer, and field deployment aimed at reaching all of the affected populations in selected developing countries. The session will focus on technologies of salt fortification with combinations of iodine, iron, zinc, vitamins B1, B9, and B12, and applications of technology to address multiple deficiencies in India, thiamine deficiency in South East Asia, and birth defects in East Africa.

Mythbusters, Sensory and Consumer Sciences, Episode 2020: We Are Still Small and Nimble Enough That We Don't Need Consumer Research Yet

Speakers:

Ann Colonna, M.S. – Sensory Program Director, OSU Food Innovation Center

John Castura – VP Innovation, Research & Development, Compusense Inc.

Silke Stevens, MS – Owner & Consultant, ConCentric Product Solutions

Aeneas Koosis, MS – Graduate Student, Washington State University

Pauline Lestringant, PhD – Consumer & Sensory Insights Specialist, Nestlé

Michael Nestrud, PhD, AOS – Founder & President, Michael Nestrud Consulting

Leanie Louw, Ph.D – Managing Director, SenseLab

A staggering proportion of new food and beverage products fail. Yet many companies looking to introduce new food or beverage products eschew sufficient consumer testing. This is particularly true in small and medium-sized businesses, which are often pursuing innovative products. It's not uncommon to hear 'we are still small and nimble enough' as a justification for gathering product opinions from friends, family, stakeholders, and other convenient sources rather than users from the target populations. Aeneas Koosis will introduce Mythbusters Episode 2020, featuring three presentations followed by a panel discussion. The presentation and discussion will challenge the shibboleths of sensory evaluation, and touch on diverse aspects of consumer testing, including statistical power, testing methodology, and evolving business and product development practices. The audience will participate by answering survey questions posed by the moderators, pose questions to the panel, and also have questions asked of them in return.

Innovation Sessions

Novel Technologies for Sustainability, Energy, and Water Conservation

Speakers:

Zhongli Pan, PhD – Adjunct Professor University of California, Davis

Hosahili Ramaswamy, PhD – Professor, McGill University

Dennis Heldman, PhD – Professor, The Ohio State University

Kathiravan Krishnamurthy, PhD – Assistant Professor, Illinois Institute of Technology

Tatiana Koutchma, PhD – Research Scientist, Agriculture & Agri-Food Canada

V.M. Balasubramaniam, PhD – Professor, The Ohio State University

Roman Bucknow, PhD – Research Team Leader, CSIRO

Chris Downs – General Manager, Crop & Food Science Queensland Department of Agriculture & Fisheries

This scientific session will focus on novel technologies that support greater sustainability in the food processing sector. We need to move past the “What?” to answer the “So What?” question. This hot topic session is brought to you by the leadership of IFT’s Non-thermal Processing & Packaging Division and Food Engineering Division and will focus on telling us how these novel technologies will deliver outcomes that are good for the product, productivity and the planet. Experts in this field will discuss the following technologies:

Innovative Infrared Heating Technologies

- Microwave Technologies
- Pulsed Light
- LED – UV Light
- High Pressured Processing (HPP)
- Pulsed Electric Field (PEF) Technology

Overcoming Challenges in Sensory Quality: Improvements and Developments in Instrumental and Sensory Quality Assurance

Speakers:

Maria Laura Montero, MSc – Research assistant, Washington State University

John Castura – VP Innovation, Research & Development, Compusense Inc.

Stephanie Lawrence – Senior Sensory Scientist, Beam Suntory Inc.

Zachary Cartwright, PhD – Lead Food Scientist, METER Group, Inc.

Glen Fox – Anheuser-Busch Endowed Professor of Malting and Br, University of California

Carla Conrad, MS, RD – Principal Sensory Program Manager, Whole Foods Market, Inc.

Quality assurance is critical for ensuring that foods are safe and meeting performance specifications, including the target sensory profile. What challenges are being faced and what new research is driving innovation in instrumental and sensory quality assurance? In this session we hear

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from four speakers. Maria Laura Montero (Washington State University) will describe how the shelf-life of ready-to-eat meal products submitted to a novel microwave-assisted pasteurization process was demonstrated using sensory, chemical, and microbial data. Zachary Cartwright (METER Group, Inc.) will discuss the importance that sorption isotherms play in texture of food products and how sensory quality can be controlled by utilizing a moisture map. Glen Patrick Fox (UC Davis) will detail how measuring malt and wort composition gives craft brewers more knowledge on fermentable sugars, which will in turn ensure consistency of product and reduce risk of beer being made outside of quality specifications. Carla Conrad (Whole Foods Market, Inc.) will deliver a presentation on maintaining a sensory quality program with a large number of diverse products and how to overcome challenges faced as it relates to focusing on high quality and product consistency.

Plant-Powered Performance: Innovation with Functional Potato Ingredients

Speakers:

Shannon Koski – *Almond Board of California*

Nicholas Burd, PhD Kinesiology – *Associate Professor, University of Illinois*

Nathan Bronson – *Project Leader, Miles Willard Technologies*

RJ Harvey – *Potatoes USA*

As consumer interest in health and wellness trends continues to rise, formulators have the increasingly difficult job of creating better-for-you clean label foods that offer specific nutritional benefits for different types of consumers, including athletes, weekend warriors, and active individuals of all kinds. This session will explore the exciting product development opportunities for potato products across many food systems. Attendees will engage in a technical education session introducing them to the host of commercially available potato products, a thorough overview of potato varieties and the functionality and adding beneficial attributes for use in developing performance foods.

Plant-Based Dairy Alternative: Cheese as a Fermentation Example

Speakers:

B. Pam Ismail, PhD – *Professor, University of Minnesota*

Renske Janssen, PhD – *Project manager Protein technology, Nizo*

Praveen Upreti, PhD – *Corporate R&D Cheese Advisor, Nestle R&D Center, Inc.*

Pascal Fourcassie, PhD – *Principal Senior Scientist, DuPont / Danisco France SAS*

Plant protein-based products are increasingly popular amongst consumers worldwide. Dairy-based formats are next to meat products the product groups where most plant-based alternatives are being developed and introduced into the market. Cheese is highly popular, yet there is an increasing interest in plant-based alternatives and innovations are moving at a fast pace in this area, but cheeses remain a product group where innovations still are only beginning to develop. This session will focus on the different aspects important for cheese. The technological potential and bottlenecks as well as the sensory aspects (including fermentation) will be shared from industry and academic perspectives.

Innovation Sessions

Protein Hybrid Products (Meat Hybrids): A Sustainable Transition to Flexitarianism?

Speakers:

Myriam Loeffler – Senior Research Associate, University of Hohenheim

Amanda Kinchla – Associate Professor, Extension Specialist, University of Massachusetts

Sergiy Smetana, Ph.D. – Head of Food Data Group, German Institute of Food Technologies

Sandra Ebert, MSc – Doctoral Candidate, University of Hohenheim

Anders Karlsson, Professor Dr. – Head of Department, University of Agricultural Science - SLU

Laila Seppä, PhD – University Lecturer, University of Helsinki

Meat is strongly integrated in our diet, everyday habits and cultural traditions: 51% of US consumers don't consider a meal without meat a full meal and 2/3 of Americans think that meat is an essential part of a balanced diet. Protein hybrid products could be a viable alternative bringing meat taste and satisfaction to the consumer along with the benefits of alternative proteins (predominately derived from plants but also from insects). The session aims to respond to the growing demand for protein hybrid products. It will present the advances in the processing of protein blended products, reveal on the nutrition values and techno-functional properties of protein hybrids, technological and process-related dependencies, and influences on the quality and safety of the final products (sausages, meatball, nuggets, etc.).

Sensory and Consumer Evaluation of Products Containing Cannabinoids

Speakers:

Donya Stubbs – Vice President, Research & Insight, Virescent Analytics

Avery Gilbert, PhD – Founder, Headspace Sensory, LLC

Lisa Beck, MBA – Virescent Analytics

Rarely does an opportunity arise in your career that a whole new category emerges to challenge your sensory foundations, push the boundaries of consumer research, and disrupt the industry. Enter cannabis. Sensory testing of products containing cannabinoids is currently legal in some geographic locations and circumstances. With proper planning, a strong knowledge of the legal requirements and sound sensory science at the foundation, research is possible to leverage the voice of the consumer to successfully and safely guide product development and marketing strategies. In this session, sensory industry experts will provide an overview of the industry challenges, the legal requirements for human testing and success stories in sensory evaluation research including trained panel profiling and consumer research.

The Plant-Based Meat World: The Crossroads of Food Technology and Scientific Innovation

Speakers:

Anusha Samaranayaka, Ph.D. – Lead Scientist - Proteins, KeyLeaf

Shannon Hood-Niefer, PhD – Vice-President of Innovation and Technology, Saskatchewan Food Industry Development Centre Inc.

Innovation Sessions

Julie Prost – Pilot Plant Manager-Process Engineer, Cleextral Inc.

Nienke Lindeboom – Key Leaf

Zak Weston – Foodservice & Supply Chain Manager, The Good Food Institute

Plant-based meat has evolved over the last couple of decades. Consumer expectations and awareness of the environmental impacts of meat production have driven the development of alternatives for regular meat. This session will highlight the latest developments in the production of plant-based meat, from raw material characterization to ingredient processing to high-moisture extrusion cooking and post-extrusion product development. It will also summarize some of the knowledge gaps and technical barriers that still need to be addressed.

Unlocking Fermentation Technology for a Sustainable, Healthy, and Clean Future

Speakers:

Jerome Diaz, Dr. – Senior Scientist, Wageningen University and Research

Joost Blankestijn – Program Manager, Wageningen Food & Biobased Research

Paulo Boer, Dr. – Sr. Scientist, TNO

Carsten Mang, Dr. – Senior Market Segment Leader - Analytics, Hamilton Bonaduz AG

Andrew Lee, PhD – Lead Scientist, Kalsec Inc.

In this session the role of fermentation as an enabling technology for a sustainable, healthy, and clean future will be defined. We will discuss how to unlock the potential of fermentation and its use for a wider range of applications in the modern world. The use of fermentation technology for the discovery and development of minimally processed, wholesome, and sustainable ingredients and products will also be detailed in this session.

Addressing the Food Industry Need for Agility with Flavor Sensory Data and Analytics

Speakers:

Mathieu Aste – CEO

Digital is happening all along the food industry value chain. Ecommerce has already disrupted retail, and as blockchain and other technologies are making traceability from field to plate a reality, food service is morphing into a network of small players enabled by Uber Eat and Deliveroo, manufacturing is optimized with supply data and system integration. Still, food product development remains an iterative trial and fail process starting from ingredients rather than starting from consumer preferences. What if food and beverage manufacturers could link consumer preference data down to flavor choice? iSense AG supports the food and beverage companies' evolution towards a more agile business model serving local and personalized consumer needs. iSense AG helps flavor houses efficiency and access to market, delivering higher value towards the growing small and mid-size food and beverage manufacturers segment. We propose to explore concrete examples of how flavor data and analytics can be applied to the management of flavor collections, whether on the food and beverage side or the flavor house side. We'll also show how flavor choice and product development can be accelerated.

Eureka Moments

Speakers:

Linda Bartoshuk, PhD – Professor, University of Florida

Lou Cooperhouse – President & CEO, BlueNalu

Jennifer Goggin – Startle Innovation

Katherine Sizov – Strella Biotechnology

Jean Van Damme – CEO and Co-Founder, Ester.ai

Innovators, creatives, marketers, researchers, and entrepreneurs all get 'stuck' sometimes. As the volume of scientific exploration and volume of publications explodes, problem-solving inputs can feel more overwhelming than useful. We tread and retread the same intellectual territory hoping that we, or our team, will somehow take so many unrelated thoughts or ideas and piece them together in an unexpected way to overcome a challenge. Fortunately, what follows these periods of struggle is often a Eureka moment. That's why we are bringing together food tech experts to each tell a story of confronting a specific moment of doubt, the setbacks and surprises along the way, their Eureka moment, and one big learning from the experience.

Global Market Expansion for Startups: Serving Different Cultures and Entering New Markets

Speakers:

Shuang Qiu – *Venture Capital*

While constantly encouraging entrepreneurs to develop new products, often we see a lack of bridge to help founders understand different markets and different resources that they could leverage. In this session we specifically discuss entering the Chinese food industry, but the strategy could be applied for many other international markets, such as Brazil, India, Africa, etc. It is critical to have this global mindset for innovators from the United States to create and innovate for a global market and give them tools and knowledge about different markets.

How to Use Strategic Thinking to Navigate 2020 Consumer, Food, and Beverage Trends

Speakers:

Suzy Badaracco, MS, RD – *President, Culinary Tides Inc.*

Consumer, food, and beverage patterns all note a pull-back from extreme behaviors and preferences. This shift to caution affects what goes on the plate and how consumers approach food. The swings in behavior and desire are simultaneously wider and more extreme in nature. It also paints a more complex landscape to have to navigate, but affords more freedom to focus in areas of interest or expertise for the industry. Food industry players should understand the issues influencing food, flavor, and beverage trends in order to successfully navigate them and uncover white space. Influencers, including consumer and health forces, will be discussed as they pertain to the shaping of marketplace trends and how they impact the creation of new products and menu items. The audience will be informed on current consumer drivers and resulting behavioral trends, health drivers and trends, and shown how they overlay to create and influence upcoming food and beverage trends.

Insights and Learnings from Applying Big Data and AI Technologies to Regulatory Food Safety Inspection Data at Scale

Speakers:

Arash Nasibi – *CEO, Hazel Analytics*

Kevin Ruth – *Hazel Analytics*

The session will cover types of scoring systems are observed and which jurisdictions have the highest concentration of perfect scores. Other issues and questions to be addressed include which are the most/least lenient states and cities as measured by the average number of violations per inspection and average critical per inspection; how jurisdictions differ when it comes to inspection

Innovation

IFTNEXT Featured Sustainability Sessions

frequency and how stated and actual inspection frequencies vary; how we can leverage data to improve inspector scheduling based on actual historical risk of establishments; opportunities to inform and improve inspection equity across zip codes and cuisine types; the performance of chain restaurants vs. independents; and differences and commonalities in performance between retail type mixes, including restaurants, convenience stores, grocers, concession stands, and more.

Robotics and the Future of the Food Service Industry

Speakers:

Rick Wilmer – *CEO, Chowbotics*

In the past two decades, a dozen different industries have transitioned to utilizing robotics. Industries that have adopted robots include mining, chemicals, textiles, electronics, metalworking, construction, agriculture, and transport equipment. In this session, we'll analyze the economic impact of robotics on these industries in order to gain insight into the potential and probable effects of robotics on the foodservice industry. In this session, we will talk about these findings and discuss the positive expected impact that robotics will have on the foodservice industry. Intelligent robotic devices are bringing fresh food to locations traditionally known for their dearth of healthy or fresh options. Robotics can keep operations running 24/7, providing access to food anytime. According to the International Food Information Council's 2017 Food and Health Survey, 55 percent of millennials say convenience is a top driver when buying food.

Engage in Developments to Best Prepare Food Science Graduates for the Global Workplace Teaching & Learning

Speakers:

Helen Joyner, PhD – Associate Professor, *A Perfect Day*

Clint Stevenson – Associate Professor, *North Carolina State University*

Bertrand Emond – Head of Membership & Training, *Campden BRI and IFT British Section*

Jon Poole – Chief Executive, *Institute of Food Science & Technology*

Emma Weston, PhD – Associate Professor, *University of Nottingham*

Attend this session as an employer or educator, and walk away with a more in-depth understanding of the challenges being faced by newly graduated food scientists in the global work environment, and how academic programs may need to be modified to better prepare students for the workplace.

IFT's mission 'To advance the science of food and its application across the global food system' is dependent on all of us being able to attract and grow the very best talent. It is often assumed that undergraduates already studying food science-based degrees will naturally find their way into food-related technical roles – but this is not always the case. In addition, many employers (in academia, research or business) often miss out on attracting the best talent due to poorly defined and described roles. It is therefore essential that employers are able to accurately, succinctly (and quickly) describe roles which will ensure they attract the right candidates for their roles.

The session will begin with a presentation of an international project in Europe (supported by the IFST) in which competencies in highest demand were identified for a variety of food science occupations. The second presentation will discuss the IFT Higher Education Review Board's approach to unifying food science curricula around a set of core learning outcomes. We will then use a mixture of facilitated discussion and some group exercises to bring the topic to life and so encourage participants to consider how they might apply this framework when growing or attracting future talent, enriching degree curricula and understand how they can inform future developments of the framework.

This interactive and practical workshop, based on Dr Weston's work will outline her competency framework and explore how degree providers can utilize this to grow (as Emma describes), 'Oven Ready Graduates'. We will also explore how employers can use this same framework to help attract the best talent for their technical roles and how it can be used by undergraduates as a self-assessment tool to help them understand best fit for roles they may be considering.

Fennema Lecture: A Brief Survey of Current Issues and Future Directions in STEM Education – awaiting session description

Speakers:

Richard Felder – Professor Emeritus, *North Carolina State University*

Richard Felder presents a trove of practical research-based strategies for designing and teaching courses that assess students' learning. His engaging and well-illustrated lecture will equip attendees to implement the strategies in their courses and to deal effectively with problems, including student resistance, that might occur in the implementation.

Teaching & Learning

The Fennema Lectureship was established by IFT in 2013 in honor of Dr. Owen Fennema, Master Teacher and Educator, in the Dept. of Food Science at the Univ. of Wisconsin at Madison.

Fennema Lecture: A Recorded Discussion with Richard Felder & Members of the IFT Academic Community

Speakers:

Richard Felder – *Professor Emeritus, North Carolina State University*

Rosalia Garcia-Torres, PhD – *Assistant Professor, California State University Northridge*

Jose Reyes de Corcuera – *Associate Professor & Undergraduate Coordinator, University of Georgia*

Richard Felder presents a trove of practical research-based strategies for designing and teaching courses that assess students' learning. His engaging and well-illustrated lecture will equip attendees to implement the strategies in their courses and to deal effectively with problems, including student resistance, that might occur in the implementation.

Richard will be joined by members of IFT's Academic Community.

Food Industry 4.0: How Do We Prepare the Future Workforce for the Food Industry in the Digital Disruption Era?

Speakers:

Daniel Voit – *CEO, Blentech Corporation, USA.*

Suvaluk Asavasanti, PhD. – *Assistant Professor, KMUTT, Thailand*

Keith Weerts, BS Chemical Engineering, MBA General Management – *Chief Digital Officer, Blentech Corporation, USA*

Kevin Mis Solval – *Assistant Professor, University of Georgia, USA*

Two critical challenges in education and skills development are (i) poor learning despite improved access at all levels of education, and (ii) serious skills mismatch, despite growing investments in education and training. This session will address how the food industry must evolve in the wave of industry 4.0 and how should we prepare the future workforce to foster the competitiveness of the food industry.

The food industry, like all industries in the current era, is undergoing a substantive shift toward automation and digital technologies. This shift is adding new technologies and directly affects the way that products are developed, scaled up, produced, and distributed. Developments in artificial intelligence and robotics seem to be major threats to jobs that require routine tasks such as production and quality control in the food industry. On the positive side, technology provides unprecedented opportunities to enhance human capacity and productivity to produce more and better products and services at much lower costs. There are also growing demands for personalized foods and transparent food supply chain leading to development of blockchain and Internet of Things (IoT) technologies for agricultural and food applications. IoT technologies, unlike previous waves of innovation, historically enable two critical capabilities – information sharing across silos/ platforms and orders of magnitude increases information accessibility. With the added trend of

Teaching & Learning

increased accessibility of automation technologies, drift toward open platform communication protocols, and wide availability of internet connectivity globally, new capabilities are being innovated using IoT technologies almost continuously.

These technologies are reducing in cost, meaning they are increasingly common, and are exponentially increasing the information we have access to, requiring that we reframe how people and businesses assimilate information and make decisions. To remain competitive, businesses and institutions must learn to adapt to this future and this requires that staff have a more fundamental understanding of digital and automation architectures and technologies and are capable of different modes of thinking.

Mind the Gap! Food Safety Outreach Programming That Fills the Food Safety Educational Gap for Small and Medium Producers and Processors

Speakers:

Amanda Kinchla – Associate Professor, Extension Specialist, UMASS

Luke LaBorde, Ph.D. – Professor of Food Science, PennState

Samuel Alcaine, PhD – Assistant Professor -Dairy Fermentation, Cornell University

J. Kim – Assistant Professor, Extension Food Safety Special, University of Idaho

Renee Boyer – Professor, Extension Specialist, Virginia Polytechnic Institute & State U

Since the implementation of FSMA, a variety of strategies, technical support, and educational programming has been developed for producers and processors. While larger businesses have been able to transition to meeting the requirements under FSMA, many small and medium food industry partners have been presented with new challenges around food safety compliance. To help provide additional support, in 2015 the USDA initiated the Food Safety Outreach Program (FSOP), a grant opportunity that helps agricultural producers and processors integrate FSMA food safety guidelines into their operations, including conventional, sustainable, and organic systems. FSOP provides support to universities, community-based organizations, and industry partners for food safety training, education, extension, outreach, and technical assistance projects. To date this program has awarded 16 pilot, 22 community outreach and extension, and 12 multistate education and training projects. Among the total funded projects were 15 community-based organizations, 30 1862 land-grant colleges and universities, six 1890 institutions, and one non-land-grant public university. Fifty percent of the total awards collaborate with cooperative extension service programs in their respective states. This symposium is a forum to provide insight on the overall FSOP program and current measurable impacts this program has had on stakeholders thus far, share several project results to date, hear from industry partners who have benefited from the FSOP program outputs, and learn how the FSOP program is expanding in response to the evolving needs of the stakeholders it serves.

The Role of IFT and its Education Community in Supporting Food Security

Speakers:

Jose Reyes-De-Corcuera, PhD. – Associate Professor & Undergraduate Coordinator, University of Georgia

Pablo Juliano, PhD – Principal Research Scientist, CSIRO

Donna Rosa – Chief Entrepreneurship Officer, Aidentrepreneurship

Bernhard Van Lengerich, PhD – Founder & CEO, IFT - Feeding Tomorrow

Dominique Bounie – Polytech Lille

William Kisaalita – Professor, University of Georgia

In this symposium session Prof. Dominique Bounie will serve as keynote speaker. He will introduce the existing collaboration between the University of Lille and the University of Ghent and summarize a need-based, stakeholder driven strategy to address humanitarian relief. This will be followed by a talk by Donna Rosa from Aidentrepreneurship who will provide examples from international development projects that illustrate the challenges and need for specialized curricula in humanitarian food science and engineering. Donna will explain how these experiences can be integrated into food science and engineering curriculum. A second talk by Prof. William Kisaalita from the University of Georgia will showcase the development of a milk cooler that originated as a senior design project with Biological Engineering students and that has found practical application among dairy farmers in Uganda. Finally Bernhard van Lengerich, past-Chair Feeding Tomorrow will describe IFT's emerging "Volunteer Globally" program. A round table will follow the presentations. The starting questions for all panelists will be: what are the challenges that developing a curriculum for food security? How IFT's community can leverage their educational and development efforts?

Communicating Science Through Storytelling

Speakers:

Allison Leibovich – *Technical Account Manager, Cargill*

Rae Ulrich – *Institute of Food Technologist*

Tom Vierhile – *VP Strategic Insights, North America Innova Market Insights*

Kantha Shelke – *Principal / Sr. Lecturer, Corvus Blue LLC & John Hopkins University*

Broken into two parts, this session introduces the audience to Marketing for Food Scientists. Audience members can expect to learn methods for clear, concise communication; data-driven strategical thinking mental models; how to influence and persuade by knowing your audience; and how to always remember the end consumer in your work. In short, “Stories stick. Science does not.”

The intention is to humanize the experience marketing and technical have with one another, to provide techniques the audience can leverage in their own life, to reiterate that gaining these skills is a journey and not an overnight process, as well as to provide exposure to new vocabulary. The diversity of the audience will bring about new perspectives, the audience thus gaining insights to better communicate cross-functionally.

After viewing the pre-recorded speakers, attendees are welcome to “Like” and comment on the session page. The Marketing, Sales, and Management Division Team will field questions and dive further into the discussion.

False Perspectives of AI and What It Is Capable Of

Speakers:

JiKai Lu – *University of Massachusetts, Amherst*

Artificial Intelligence (AI) is a very popular topic in food science today; however many may not be able to exactly pinpoint what it is. Although AI is a powerful tool, some can believe that it is capable of doing far more than it actually is. In this module, an introduction to what AI is as well as its promise and limitations will be discussed by a programming expert. After attending this lecture, one will have a better idea of what AI is, how it can be used and at what limits.

How to Excel Your Career in the Age of Digital Transformation

Speakers:

Daniel Voit – *CEO, Blentech*

Keith Weerts, BS Chemical Engineering, MBA General Management – *Chief Digital Officer, Blentech*

Thomas Burke – *Institute of Food Technologists*

In the age of digital transformation, Food industry is undergoing a substance shift toward automation and digital technologies which change the way that products are developed, scaled up, produced and distributed. It’s time to learn how to embrace the digital technologies and leverage their potential as a new professional!

Professional Development

How to Make More Money and travel the World as a Graduate Student

Speakers:

Shannon Coleman, Ph.D. – *Assistant Professor and State Extension*

Graduate school may be tough, but are you meeting your full potential and making the most of your experience?

Inspiring and Advocating for Your Team: Quickly Learn and Apply Techniques for Team Management

Speakers:

Beth Ritchey – *Associate Director R&D, Tyson Foods*

Kimberly Hogan – *Group Manager, Sensory Science, DuPont*

Michael Nelson – *Vice President of Sales, Griffith Foods*

This management-themed session introduces the audience to management skills via panel discussion. The moderator will introduce themselves, then provide an outline of the session agenda and key learning objectives. Panelists will share best practices and advice related to topics: how to be a champion for your team; how to motivate your team or inspire your team, both when company morale is low and when you can capitalize on the highs (with best practices/industry examples); and best practices when working remotely.

After viewing the pre-recorded speakers, attendees are welcome to “Like” and comment on the session page. The Marketing, Sales, and Management Division Team will field questions and dive further into the discussion.

Marketing for Food Scientists: Enhance Cross-Functional Communication by Acquiring Marketing Skills

Speakers:

Kantha Shelke, Ph.D., CFS – *Principal / Sr. Lecturer, Corvus Blue LLC/John Hopkins University*

Tom Vierhile – *VP Strategic Insights, North America, North America Innova Market Insights*

Rae Ulrich – *Institute of Food Technologists*

Angelina Schiano – *Graduate Research Assistant, NC State*

Allison Leibovich – *Technical Account Manager, Cargil*

Judy Lindsey, CFS – *Sara Lee Frozen Bakery*

Broken into three parts, this Marketing-themed session introduces the audience to Marketing and establishes common language of the field (10 minutes), a group of panelists share their experiences working with internal stakeholders and consumers alike (15 minutes), followed by breakout sessions where attendees are prompted to share real-life experiences (35 minutes). Audience members can expect to learn methods for clear, concise communication; data-driven strategical thinking mental models; how to influence and persuade by knowing your audience; and how to always remember the end consumer in your work.

Panelists will provide real life examples from their professional experience; e.g. why a project between Marketing and R&D was successful, best practices to a new product launch, and “glass shattering” moments of insight that shifted their work. The intention is to humanize the experience

Professional Development

marketing and technical have with one another, to provide techniques the audience can leverage in their own life, to reiterate that gaining these skills is a journey and not an overnight process, as well as to provide exposure to new vocabulary. The diversity of the audience will bring about new perspectives, the audience thus gaining insights to better communicate cross-functionally.

R, a Powerful Resource for New Professionals

Speakers:

Yanjiao Zhou – *UConn Health*

R is a powerful, free tool scientists that is widely used in statistics and big data analysis. In this interactive lecture, one will be introduced to the R programming environment and software. Further, general information about how to navigate the R environment for statistical purposes along with common R commands and functions will be presented. Finally, resources for teaching oneself and troubleshooting R will be provided. After attending this module, one will be on their way to harnessing the expansive power of R.

The Microbial Future is Here: An Introduction to Microbial Bioinformatics

Speakers:

John Gibbons, PhD – *Assistant Professor, UMass Food Science*

The introduction and advancement of next generation sequencing has unquestionably and irrevocably changed the face of food microbiology. The purpose of this module is to not only describe what microbial bioinformatics is, but introduce and walk attendees through real bioinformatic analysis and exercises. Further, considerations regarding bioinformatic methodologies and analysis will be discussed. After attending this session, one will have a better idea of the many considerations and limitations involved in microbial bioinformatic analysis, as well as know some tools to learn more how to conduct microbial bioinformatic analysis.

Want to Become a Legend? Academia is for You!

Speakers:

Cheryl Rock, Ph.D. – *Assistant Professor of Food Science, California State University*

Academia is an exciting and rewarding career profession that has the potential to transform an industry. This session will discuss why students and new professionals should consider the academic career journey, while discussing how to find lasting mentors.

Professional Development

Your Journey Starts Now: Mapping your IFT Volunteer Pathway

Speakers:

Megan Torline – R&D Food Scientist, BlendTech Inc

Brendan Niermira – Research Leader, USDA

Michelle Braun – Global Protein Scientific Affairs, DuPont

Keren Kles, PhD – Chief Technology Officer The Flying Spark

Charles Diako – Senior Lecturer, Massey University

Elizabeth Clark – Sensory and Consumer Scientist, McCormick and Company Inc.

Jumping into a career after college can be overwhelming. On top of new responsibilities and many times a new city and living space comes the challenges of building a network and finding your place in the industry. IFT offers so many helpful resources, but where do you start? Come join us in this educational session to help you find your place in the industry that is feeding the world!



AWARDS

Gilbert A. Leveille Award and Lectureship.

Speakers:

Barbara Schneeman, Ph.D. – *Professor Emerita*

Trailblazer Award & Lectureship

Speakers:

Christine Bruhn, PhD, CFS – *Cooperative Extension Specialist Emerita*

Stepping up to the Plate: In this energized lecture, Christine Bruhn will talk about her experiences that led to this recognition, then offer a challenge to attendees.

W.K. Kellogg International Food Security Award and Lectureship

Speakers:

Alexander Mathys, Prof. Dr. – *Head of Sustainable Food Processing Laboratory,*

Marcel Loncin Research Prize

Speakers:

Julie Goddard, Dr. – *Associate Professor, Cornell University*

In addition to significant regulatory and behavioral economics challenges, there remain technical hurdles to the successful transfer and adoption of active packaging technologies which seek to reduce waste and improve human health. With a focus on non-migratory (immobilized) active packaging materials, this talk will describe research in the Goddard group at Cornell University designed to overcome technical hurdles to bridge the gap between proof of principle active packaging studies and commercially translatable science. After establishing motivation for advancement in non-migratory active packaging technologies, case studies in antimicrobial, antioxidant, and biocatalytic applications will be reviewed, with an integrated virtual Q&A experience.





Virtual Expo Showcase Highlights

Find it before you need it

Discover the latest products, services, and solutions from the comfort of your couch! Join us for IFT20's virtual expo—your virtual product and service rolodex—where you will be able to:

- Experience real-time and on-demand presentations of products and solutions soon to go-to-market
- Speak with product experts who can help you find the solutions you need to solve the problems you have now
- Easily search and access solutions by company or product
- Explore case studies, product research, and demonstrations to help you make well-informed purchasing decisions
- Ask questions and get the answers you need to solve your biggest product development challenges
- Favorite providers for easy access well after the event

To view all exhibiting companies visit the online SHIFT20 Planner and Virtual Showcase site at ift20.mapyourshow.com.

Research Showcase

Research is the foundation of innovation. It provides us the critical insight into what is possible and inspires our creative thinking to help us imagine and design better food.

Join us online at IFT20 where you will have access to over 600 research presentations sharing the latest, global discoveries impacting food processing, food safety and security, quality assurance, packaging, sustainability, food policy, and more.

Challenge your current thinking, be inspired, and walk away with new ideas and solutions to take your work to a whole new level.

New this Year—Research Showcase

New to our research presentation program will be Research Showcase. Featured research in a TED talk style format with an interactive QA portion following each presentation. Come ready to be challenged and ask challenging questions!



Networking on Steroids

The SHIFT20 virtual platform provides a robust networking feature connecting you to who's who in the science of food and food innovation. Easily find peers interested in the same topics, research, or product solutions you are. Follow, comment, and chat with presenters, exhibitors, and fellow attendees. Share your research, case studies, product solutions, and more! Added bonus, your profile and profile directory are accessible for one year after the event! This alone is worth the cost of registration!



Secure your virtual seat today!

Experience a ton of great content, networking, and real-time product exploration in three action-packed days PLUS access the full event as an on-demand library and the robust profile directory after the event is over! And did we mention, discount pricing is available for IFT members? Incredible value at an incredible price.

Register today at iftevent.org

SHIFT20

JULY 13 – 15, 2020

See food innovation with a *whole new lens.*