



**ANNUAL MEETING + FOOD EXPO®**

# **Scientific Program Track Descriptions & Topical Priorities**

**The complete Call For Session Proposals guidelines will be posted at [ift.org/IFT12](http://ift.org/IFT12) by September 1, 2011.**

**Call for Session Proposals Submission Dates:**

**Opens – October 3, 2011**

**Closes – November 8, 2011**

**Call for Technical Research Papers Submission Dates:**

**Opens – October 3, 2011**

**Closes – January 6, 2012**

**Call for New Products & Technologies Abstracts Submission Dates:**

**Opens – October 3, 2011**

**Closes – January 6, 2012**

## Key Focus Area/Core Track Descriptions & Topical Priorities

### Food Safety & Defense Track Description

The food safety and defense track will consider sessions addressing current or hot topics in a number of areas including microbial and chemical food safety and defense systems and their components (e.g., risk assessment, management, and communication, traceability, quality systems, product testing, auditing, crisis management, recalls, laws and regulations, and standards).

#### Topical Prioritization:

- Unintentional contamination (e.g., biological, chemical, physical)
- Intentional contamination (e.g., economically motivated adulteration, terrorism motivated use of threat agents, and risk communication)
- Ingredient and commodity-specific concerns (e.g., fresh produce, nuts, meat, poultry, seafood, etc.)
- Microbial safety of processed food products (e.g., complex RTE foods, not-RTE foods)
- Safety of heat processed food products (e.g., acrylamide formation in heated foods)
- Food allergens, intolerances (e.g., thresholds and detectable limits, genetic modification and other methods to mitigate problems)
- Safety, efficacy of novel technologies (e.g., nanotechnology)
- Safety of packaging materials (e.g., alternative components, unintended consequences of banning certain components such as BPA)
- Unintended consequences of reformulating foods for addressing dietary guidelines and/or consumer trends (e.g., salt reduction, and organic, raw and local foods)
- Food safety and quality management systems (e.g., regulations, compliance, and auditing standards)

#### Additional Possibilities:

- Early detection of foodborne illnesses and outbreaks (epidemiological perspective, rapid detection)
- Safety of extended shelf life foodstuffs
- Technologies and interventions for food safety (e.g., irradiation, microwave food processing)
- Food safety and defense education, training (e.g., GMPs, best practices), communication (e.g., via consumer instruction on labels)
- Import and export safety

## **Food Health & Nutrition Track Description**

This track will present applied nutrition research, new science and consumer data associated with the development of foods to promote health. Key issues include dietary guidance processes, labeling initiatives, nutrition education efforts, and ingredients for the management of health conditions.

### Topical Prioritization

- Applications of evidenced-based reviews to food
- Flavonoids and other bioactive compounds—where are we and where do we go from here?
- Industry's role in childhood obesity solutions
- Dietary guidance processes (IOM as well as Dietary Guidelines)
  - How can the food science voice be heard?
  - Defining transparency/conflict of interest
  - How to interpret the science?
  - Are the recommendations/applications attainable?
  - Is the process working?
- Foods for the management of health conditions (gluten-intolerance, diabetes, heart disease, hypertension, obesity)
- Inflammation
- Nutrient-gene interactions
- Current concepts around dietary fatty acids
- Menu labeling and delivery of dietary guidance in schools and restaurants
- The role of distributors (grocery stores, restaurants, cafeterias, vending) in nutrition education
- Front of pack labeling (Did the IOM report get it right? Will it make a difference to consumers?)
- Impact of consumer technology and social media on nutrition education
- Healthy aging
- Novel approaches to increasing fruit and vegetable intake

## **Food Processing and Packaging Track Description**

This track will focus on food processing and packaging in order to improve quality, efficiency, sustainability or to lead to development of new products, processes, packaging materials or techniques. Sessions will seek to improve understanding of scientific and engineering principles of new and existing food processing and packaging technologies.

### Topical Prioritization

- Food processing unit operations
- Food processing and packaging modeling
- Process measurement, control and automation
- Packaging materials
- Packaging safety
- QA/QC issues for food processing and packaging
- Technologies to reduce postharvest loss
- Resource utilization (energy, water, green technology)
- Nanoscale science/nanotechnology
- Biotechnology, fermentation (may include synthetic biology relevant to food)
- Innovative processing and production technologies (e.g., both advanced thermal and nonthermal technologies, new membrane technologies, new fractionation and separation methods, micro-encapsulation, nano emulsion)
- Analytical instrumentation, techniques, metrology, and novel applications
- Data management, automation, information technology (e.g., traceability, labeling, RFID)

## **Product Development & Ingredient Innovations Track Description**

This track will focus on the primary aspects of the development and introduction of new food and beverage product innovation to the global marketplace. This category includes consumer research, product innovation procedures and related business information, as well as the technical and marketing aspects of product development.

### Topical Priorities

- Formulation
  - Use of ingredients for innovation, functionality, and synergistic benefits
  - Regulations and Labeling
  - Nutrition and health benefits
  - Productivity (e.g. cost optimization, feasibility, efficiency)
  - Case study
- Culinary arts and science
  - Role of culinary arts and science in product development
  - New developments in the integration of culinary arts and science
  - Case study
- Processing and packaging implications
  - Effects of processing and packaging on ingredients, sensory or nutritional food attributes
  - Green solutions (e.g. biodegradable, recyclable, minimize carbon footprint)
  - Scale-up/commercialization
    - Optimization of speed to market: Risks and opportunities
    - Co-packer/ manufacturers
    - Case study
- Shelf-life and product stability
  - Logistics
  - Physical, biochemical, and sensory properties
  - Predictive models (development and implementation)
  - New technologies to improve shelf-life
  - Case study
- Consumer understanding, research and implication for product design
  - Trends and market knowledge impacts on innovation
  - Consumer needs
  - Case study
- Marketing
  - Market assessment and financials
  - Branding, labeling and positioning
  - Niche or emerging markets (age groups, health sensitive, organics, etc)
- Open innovation and intellectual property
  - Key challenges of intellectual property
    - Patents, trade secrets, licensing process
  - Acknowledgment and protection of intellectual property
- Pet food innovation

- Animal nutrition applied to innovation
  - Case study
- Intellectual Property
  - Key challenges of intellectual property:
    - Patents, trade secrets, non-compete agreement, licensing process
  - Acknowledgment and protection of intellectual property
- Culinary science: integration of culinary disciplines and R&D
  - How to scale up culinary prototypes through their development stages
- Global product development
  - Global market trends
  - Global regulations and how they affect innovation
  - Effects of globalization: how innovation could cross borders
  - Case study
- Pet Food innovation
  - Animal nutrition applied to innovation
  - Niche markets (age groups, health sensitive, organics, etc)
- Nutrient profiling and consumer communication
  - Simplification of nutritional information: Are these systems successful? (Smartchoice)
- Open innovation and external partnerships
  - First step to product development: IDEATION
  - How teams are engaged in or out of a firm to focus on innovation
  - Developing “comfort food” during recessionary times

## **Sustainability**

This track will showcase the efforts of food industry, academia and government to develop and ensure a sustainable food supply. The science and technology to support efforts in food sufficiency, sustainable product development and packaging, ingredient sourcing and food production, and waste management will be addressed. The business case for environmental sustainability will also be addressed.

### Topical Priorities

- Lifecycle assessment
  - Materials
  - Sustainable transportation/supply chain
  - Waste management
  - Packaging
  - Sustainable ingredient sourcing
- Green tools and technologies
  - Product development
  - Harvesting technologies
  - Recycling technologies
  - Use of alternative resources
  - Efficient resource use
- Climate change
  - Technologies behind carbon cap, carbon trading, carbon offsets
  - Calculating carbon foot print
  - Emissions
- Water
  - Wastewater management
  - Water reuse
  - Conservation
  - Water quality
  - Water sufficiency
- Primary agricultural harvest and production
  - Livestock
  - Aquaculture
  - Fishery
- Business case for sustainability
  - Impact of pricing on consumer choices
  - Innovation tools
  - Real/perceived value
  - Achieving a competitive advantage in the marketplace
- Communication and education
  - Use of the term green
  - Labeling considerations
  - Environmental claims and declarations
- Food safety and sustainability

## **Public Policy, Food Laws & Regulations Track Description**

This track will discuss the practical, real-world implications for the food industry of legislative, regulatory, and judicial developments on a U.S. national and international scale. It will include issues arising in such areas as food safety and food defense, food labeling and marketing, and import/export requirements for food, and will address the implications of these issues for consumers, producers and marketers, and other members of the public.

### Topical Priorities

- Current issues (e.g., what's on the Hill, recent legislation, public policy initiatives, new regulations, nutrition & health)
- Supply chain management and quality monitoring (e.g., adverse event reporting, auditing, traceability)
- Import/export regulations (e.g., customs issues)
- Consumer right to know (e.g., biotech, irradiation, nanotechnology, FDA transparency, Proposition 65)
- Science base to support regulations and reasonable standards (e.g., lower limits of detection, precautionary principle issues, risk communication, consumer concerns)
- International/global harmonization (e.g., Codex, JECFA, JEMRA)
- Labeling and advertising (e.g., front of package, nutrition panel, country-of-origin, allergens, organic)
- Food additives and contaminants

## Education & Professional Development Track Description

This track will help enhance professional skills for career growth and the effective delivery of food science education. Topics such as project management, communication skills and career management will be discussed. Programming is intended for all professionals in industry, government, NGOs and academia.

### Topical Priorities

- University Extension programs: changes in light of the recession
  - 3 case studies on how we funded our extension program in a creative way
  - Cross-training other (non-food science) university programs to learn how to solve the issue
- Collaboration across industry-academia-government-NGOs in the era of 'open innovation'
  - Possibly position extension program innovation as a specific aspect of this collaboration?
- Translating technical information for non-technical audiences
  - Marketing focus
  - Effectively communicating with plant employees
- Taking back control of your career.
  - Marketing yourself for your first job, a promotion, a new role in a different department, an entirely new job function; finding a job after being laid-off.
  - What is networking?
- Students and New Professionals: how to navigate your early career.
- Mentoring: how to find one; how to be one.
  - Session structure: speakers onsite, then matchmaking within the online community afterwards
- Speed Networking: repeat the model from years' past
- Innovative teaching strategies in the classroom
  - recruiting students into food science programs
  - marketing university food science programs to non-food science majors
  - including non-food science programming in a food science curriculum
- Project management
- Leadership training
- Crisis management (food recalls, etc)
- Team building; working with cross-functional teams
  - building diverse teams
- Public speaking
- Industrial globalization
  - Business etiquette around the world
    - Working with international colleagues

## **Food Microbiology Track Description**

This track features sessions highlighting cutting edge research and developments in food microbiology, including detection and quantification methods, quality control, survival of microorganisms throughout the food continuum and processing environments, characterization of emerging pathogens, and microbiology of health and wellness foods. Presentation of case studies, education, and sharing of best practices will be encouraged.

### Topical Priorities

- Detection and quantification of microorganisms of importance throughout the food continuum including new developments in molecular and rapid methodologies, and inclusive of sample preparation issues.
- Growth, survival, and death of microorganisms in food production and processing environments.
- Quality control, process control and validation in food microbiology, including case studies.
- Studies on the stability and persistence of microorganisms, decontamination and inactivation strategies, emerging technologies for control of pathogens, stress response and pathogenicity factors.
- Characterization of microorganisms of emerging importance, for example pathogens and antibiotic resistance
- Microbiology of health and wellness foods such as fermented foods, fermentation-derived products and pre- and probiotics, including case studies.
- Student and professional education associated with food microbiology, including sharing of best practices.

## **Food Chemistry Track Description**

This track will showcase presentations of novel basic and applied research relating to chemistry and analysis of foods.

### Topical Priorities

Below are the topics/areas the track subpanel encourages innovative, applied and cutting-edge session proposals:

- Physics of soft condensed matter
- Interactions of bioactive components with the food matrix including the effects of processing
- Food chemistry in the mouth and GI tract
- Free radicals and oxidative mechanisms.

## **Food Engineering Track Description**

This track will present basic research pertaining to food engineering including measurement, modeling and control of food processing systems. The food engineering sessions will address categories such as transport processes; physical, chemical and microbiological properties; integration of transport processes and kinetics leading to quality, safety predictions, and connections between food and health.

### Topical Priorities

- Process modeling and experimentation
  - Heat transfer
  - Mass transfer
  - Fluid mechanics
  - Thermodynamics
  - Nonthermal processing
- Properties (measurements and predictions)
  - Physical (rheological, thermal, electromagnetic, etc.)
  - Chemical (kinetics of color, flavor, etc.)
  - Microbiological (kinetics of growth and inactivation)
- Integration of transport processes and kinetics, relating to quality, nutrition, health, and safety (modeling and experimentation)
- Automation
  - Process control
  - Sensors
- Nanoscale food engineering and technology
- Systems engineering approaches

## Sensory Science Track Description

Sessions offered in this track will address the latest advancements in the science of sensory and consumer research, with applications to product development and marketing research.

### Topical Priorities

- Future Outlook of Sensory impacted by Technology and Consumer Behavior Changes
  - Consumer Behavior trends – holistic and stimulating experiences, cross cultural fertilization of tastes and preferences, greater experimentation, health and wellness influences
  - Measurement and Theory
  - Technology trends to drive future advances - data collection methods, smart-phone surveys, the internet shopper, etc.
- Sensory in Market Research and the Retail Experience
  - Measurement - point-of-purchase shopper intelligence, immediate feedback opportunities/automatic couponing/etc.; linking it back to response tracking and analysis; real-time consumer research, consumer co-creation, etc.
  - Sensory's role in shopper insight and the retail experience.
  - Experiential Marketing - brand interaction, product trial and brand engagement
- Sodium Perception Modifications
  - Perceptions (e.g., blocking, modality interaction, sweet vs. salty, bitterness suppression, etc.)
  - Research methods and strategies (e.g., enhancers, replacers, gradual reduction of sodium, dissolution rate modification, microstructure changes, consumer response, etc.)
- Differences and/or Changes in Sensory Perception
  - Age-associated losses in sensory function
  - How sensory perception affects quality of life in the elderly
  - Age-related impact on perception, including disease states
  - Age-related physiological factors and mechanisms of food choice and acceptance
  - Age-related pleasantness and acceptance of food flavor and textures
  - Bitterness perception and palatability (early childhood development)
  - Individual Differences and Sensory Processing (early childhood development)
  - Paradox of discrimination and non-discriminators (early childhood development)
  - Regional and national differences in sensory perception

- Role of Genetics & Biology in Sensory Perception
  - Genetic Variation in Taste Perception - What impact do taste receptor genes have on ability to taste? Do people respond differently and, if so, how?
  - Genetics and preferences
  - Genome view of human olfaction – phenotypic diversity
- Advances in Discrimination Testing
  - Lack of focus in current discrimination testing; two types: training a specific panel or training consumers on the method (risk probability)
- Neuroscience & Sensory
  - Affect of advances in technology to impact sensory responses; changes in sensory and brain response in odor experience, brain messaging a response; etc.; cognitive patterns and relationship with sensory perception
  - The Olfactory Bulb; Mechanisms responsible for encoding and processing odor information and how it changes through childhood to adult and as related to diseases of aging such as Alzheimer's, etc; This falls into the field of neuroscience/neurobiology and Sensory
  - Neuroscience today, and what the future holds
- Influence of Emotions on Sensory Perception
  - Effect of emotional tone, personality characteristics, cognition and emotion on perception
  - Understanding and measuring emotions and impact on consumer reaction, responses, judgment and choice
  - Value, usefulness, and applicability of emotions in the sensory process; how to effectively apply emotions in the sensory process
- Sensory Laws and Regulations
  - Advertisement claims
  - Attribute, performance, and hedonic claims, both comparative and non-comparative
  - Ethics/privacy and standards for research with humans; consumer implications in terms of perceived intrusiveness
  - Sensory Claim Substantiation
  - Sensory clinical testing
- New Statistics in Sensory and Consumer Sciences
  - Cutting-edge Modeling Techniques
  - Data mining: Mining large datasets to gain insights (e.g., what are people putting in their shopping cart and which foods tend to be purchased together); going beyond statistics to mathematical modeling neural networks