A full list of scheduled events is available on our website!
https://www.ifsh.iit.edu/news-events

Food Safety & High Throughput Sequencing (HTS): What does the Future Hold?
May 30-31, 2018 at Chicago Marriott Southwest, Burr Ridge, IL

FSPCA Annual Conference
July 18-19, 2018 at Chicago’s Navy Pier, Chicago, IL

FSPCA Preventive Controls for Human Food Participant Courses
August 28-30; October 2-4; November 6-8 at the IIT Moffett Campus, Bedford Park, IL

IFSH 2018 Annual Meeting (for IFSH members)
September 25-26, 2018 at Chicago Marriott Southwest, Burr Ridge, IL

Food Waste and Sustainability: Strategies to Improve Food Safety, Food Security and Nutrition.
IFSH and University of Wisconsin’s Food Research Institute (FRI) Joint Symposium
September 27, 2018 at Chicago Marriott Southwest, Burr Ridge, IL

Connect with IFSH

LinkedIn- institute news https://www.linkedin.com/company/iit-institute-for-food-safety-and-health/

Twitter-keep up to date with our latest news and activities https://twitter.com/iit_ifsh

Facebook-find out about our history, news and events https://www.facebook.com/IITIFSH/
IFSH began implementing a series of webinars called Technical Connections Meetings (TCMs) to communicate and engage with our members and stakeholders concerning IFSH’s collaborative research program.

The March 14th webinar showcased the topic of High Throughput Sequencing. Invited speakers were: Dr. Behzad Imanian, Research Assistant Professor, FSN and IFSH HTS Initiative leader, presenting about High-Throughput Sequencing (HTS): a Brief and Broad View and Dr. Kristin Schill, Research Microbiologist, FDA, presenting on Genetic Characterization of Group I and Group II Clostridium botulinum Using High Throughput Sequencing (HTS).

We look forward to having you join us for the upcoming 2018 Technical Connections Meetings

Save the date for the fall TCM!

November 14, 2018

Please contact Renee Anderson at randerson1@iit.edu if you would like to learn more about our IFSH Technical Connections Meeting Webinars!
The results of the collaborative research program at the Institute for Food Safety and Health's National Center for Food Safety and Technology, are reported in scientific publications, disseminated through presentations at professional conferences or published as monographs. Literature citations for publications authored or co-authored by IFSH/IIT, IFSH/NCFST, FDA CFSAN Division of Food Processing Science and Technology staff from 1989-2017 are available in one complete document. https://www.ifsh.iit.edu/knowledge-center/ifsh-research-papers-white-papers-and-reports

Each year, IFSH’s National Center for Food Safety and Technology publishes the Annual Report of Research (ARR) exclusively for IFSH members. The 2017 Annual Report of Collaborative Research is available for IFSH members now. https://www.ifsh.iit.edu/knowledge-center/ifsh-annual-review-report-research

A Sampling of Project Titles Include:

Assessing Consumers' Understanding of the Term 'Natural' on Food Packaging

Improved Environmental Sampling Methods for Detection of Food Allergens

Evaluating the Effectiveness of Sprout Seed Treatments – Factors to Consider

Enhancing Legacy Technologies for Pasteurization

Influence of the Microflora of Raw Milk Gouda Cheese on the Growth and Survival of Listeria monocytogenes and Escherichia coli O157:H7 during the 60 Day Aging Process
February 12. IFSH was a sponsor at the Chicago Section Institute of Food Technologists (IFT) Dinner Meeting. It was a highly attended event of Chicago area food industry professionals (Over 200 attendees). The evening represented a good opportunity to feature the latest in IFSH High Throughput Sequencing (HTS) announcing both new HTS services and a very exciting HTS symposium to be held May 30-31, 2018 at the Chicago Southwest Marriott, Burr Ridge, IL. The IFSH sponsorship included an IFSH information table and a presentation by Dr. Behzad Imanian from the podium on these IFSH initiatives.

February 27-March 2. IFSH delegates attended the Institute for Thermal Processing Specialist (IFTPS) Annual Meeting in San Antonio, TX. Glenn Black, Associate Director of Research-FDA presented “Regulatory Considerations for Novel Processing Technologies” and Nathan Anderson, Agricultural Engineer-FDA presented “Making a Validation Study Acceptable to a Regulator” during the meeting. Patrick Ginty, IFSH Facilities Engineer represented IFSH as an exhibitor. This meeting convenes leading thermal process specialists from across the nation and world to share best practices and thought leadership in this important food safety category.
February 22-23. Dr. Alvin Lee, Associate Professor, Food Science and Nutrition; Director of the Center for Processing Innovation presented “Rapid methods for safe food-A North American Perspective” and “Validation of Process for Viral Inactivation” at the **Advanced Diagnostics for New Zealand Food Safety Workshop** in Auckland, New Zealand. The aim of the workshop is to discuss new developments in the field of advance diagnostics and identify future research priorities in advanced diagnostics. [http://scienceevents.co.nz/food-safety-diagnostics](http://scienceevents.co.nz/food-safety-diagnostics)

March 5-8. Dr. Robert Brackett, IIT Vice President and IFSH Director traveled to the **GFSI Global Food Safety Conference** in Tokyo Japan. This world renowned annual event is attended by over 1,000 food industry experts from over 60 countries across the globe. The Conference provides a unique opportunity for the food industry to rendezvous for the advancement of food safety and consumer trust worldwide. [www.tcgfoodsafety.com](http://www.tcgfoodsafety.com)

March 18-22. Dr. Indika Edirisinghe, Associate Professor Food Science and Nutrition; Associate Director of Center for Nutrition Research traveled to the **American Chemical Society Conference** in New Orleans, Louisiana. Dr. Edirisinghe organized and presided an AGFD: 110th UMAMI Memorial Symposium: Past, Present, Future. Dr. Lauren Jackson, Brach Chief, FDA presented as part of a panel discussion on careers in agricultural and food chemistry. Her session was titled: Career Trajectories for Ag and Food Chemists. [https://www.acs.org/content/acs/en/meetings/national-meeting.html](https://www.acs.org/content/acs/en/meetings/national-meeting.html)
March 19-21. Dr. Alvin Lee, Associate Professor, Food Science and Nutrition; Director of the Center for Processing Innovation presented “Technologies for Norovirus Inactivation” at the NoroCORE Final Showcase Meeting in Atlanta, Georgia. The meeting is a culmination of the collaborative’s research, outreach, and education activities focused on reducing the burden of foodborne viruses, particularly norovirus. http://www.afdo.org/blog/5048422

March 23-24. IFSH was an exhibitor at the FamilyFarmed’s 14th Annual Good Food EXPO; Good Food Trade Show: Production, Policy & Industry Exchange at Chicago’s UIC Forum. This trade show is focused on local and sustainable food, promoting a heathier, more environmentally sustainable and more economically dynamic food system. The showcase brings producers and other stakeholders together with trade buyers for a day of exhibiting, educational programming and networking opportunities. https://goodfoodexpo.org/overview/

March 27-28. Dr. Nathan Anderson, Agricultural Engineer presented a session on FDA Low Acid Canned Foods (LACF) Regulations at the Better Process Cheese School at the University of Wisconsin's Food Research Institute. This course covered LACF regulations as they pertain to shelf-stable process cheese manufacture. Course topics include microbiology and control of Clostridium botulinum, thermal processing/pasteurization, formulation control, process instrumentation, HACCP, production and packaging controls, and records. https://fri.wisc.edu/files/Brochure_File/BPCS2018_Brochure.pdf

April 17-19. Dr. Robert Brackett, IIT Vice President and IFSH Director was invited to moderate the expert panel discussing FSMA Preventative Controls Implementation—Here and Now at the International Cheese Tech Expo in Milwaukee, Wisconsin. http://www.cheeseexpo.org/
We are Delighted to Welcome New Member Companies for 2018. Good Foods. To find out more about good foods, guacamole, dips, salads, and sips please go to http://goodfoods.com/
March 28. Dr. Jesse Miller, Director of Applied Research Center and NSF AuthenTechnologies, NSF International presented a seminar on “NSF International: An Overview”. In his role as Director of NSF International’s Applied Research Center, Dr. Miller works with collaborators to perform, publish and promote valuable, novel scientific research that furthers public health and safety. http://www.nsf.org/

April 25-26. IFSH hosted a Platform Research Advisory Meeting which included a series of concurrent platform-specific facilitated sessions followed by a plenary talk on CFSAN research priorities. This meeting was a well attended event with over 70 participants including our IFSH industry members, FDA and IIT/IFSH staff.
Food Safety Preventive Controls Alliance (FSPCA)
In accordance with the Alliance’s mission to support safe food production for the U.S. market, the FSPCA has to-date trained over 1,900 Lead Instructors and issued over 70,000 Preventive Controls for Human/Animal Food certificates and Foreign Supplier Verification Programs certificates combined.

Visit the FSPCA Website at fspca.net for more information.

2018 FSPCA Annual Conference
Navy Pier, Chicago, Illinois
July 18-19, 2018
Immediately Following the IFT Annual Conference
Wednesday 1:00 - 5:00 pm
Followed by Networking Reception
Thursday 8:00 am - 5:00 pm

Updated Training Materials
The FSPCA Preventive Controls for Animal Food course manual and the FSPCA FSVP course manual have been updated! Download a free copy from the FSPCA website.

The public version of the Animal Food participant manual v1.1 along with the errata sheet are available for download on the FSPCA website: https://www.ifsh.iit.edu/fspca/fspca-preventive-controls-animal-food. The public version of the FSVP participant manual v1.1 along with the errata sheet are available for download on the FSPCA website: https://www.ifsh.iit.edu/fspca/courses/foreign-supplier-verification-programs-fsvp/

2018 Lead Instructor Training
The FSPCA is in the midst of planning Human Food, Animal Food and FSVP Lead Instructor courses for 2018. Approved Lead Instructor applicants will receive email notifications, and the FSPCA website will be updated, once additional courses are available.

Looking for FSPCA Preventive Controls for Human Food, Animal Food or FSVP participant courses? Visit the online course list: https://fspca.force.com/FSPCA/s/ (click on the “Course” tab). The list can be sorted by type of course, start date and location!
http://www.iit.edu/ifsh/sprout_safety/

The Sprout Safety Alliance (SSA) training curriculum version 2.0 public version is available on the SSA website https://www.ifsh.iit.edu/ssa for free download and hard copies are available for purchase at the online bookstore http://bookstorefspca.ifpti.org/index.php/ssa.html. An SSA blended course comprising an online module covering the knowledge sections of the twelve chapters of the curriculum and a face-to-face component (Part 2) is available.

February 13. The Sprout Safety Alliance (SSA) has conducted the first SSA Sprouter Training Blended Part 2 course in Phoenix AZ on February 13 2018. Inspectors and extension specialists from the western states have attended the course. We received positive feedback and constructive suggestions on the SSA Online and the Part 2 courses.
Welcome New Staff

Please welcome Geethaanjali Vijayakumar, Proficiency Testing Team-Support Scientist-Chemistry

Geethaanjali Vijayakumar joined IFSH as a Support Scientist-Chemistry, working in the joint Proficiency Testing team with our FDA PT colleagues. Geethaanjali recently completed her Master Degree in Food Safety and Technology in December 2017 from Illinois Institute of Technology.

February 2. National Wear Red Day
IFSH and FDA NCFST staff participated in the National Wear Red Day!

Excellence in Teaching Award

Please join us in congratulating Dr. Kathiravan Krishnamurthy, Assistant Professor Food Science and Nutrition on receiving the IIT School of Applied Technology Excellence in Teaching Award.
Faculty Spotlight

Dr. Aman Sandhu received her B.S. and M.S. degrees in Food Science and Technology (honors) from India, and received her Ph.D. in Food Science from the University of Florida. She did her post-doctoral fellowship with Dr. Britt Burton-Freeman and Dr. Indika Edirisinghe at IFSH, and transitioned into a faculty position in Fall, 2017.

Research Dr. Sandhu’s research is focused on the identification of plant-derived chemical compounds (also known as phytochemicals) in fruits and vegetables. In addition, she is interested in understanding the health promoting clinical benefits of these compounds in conditions such as diabetes, cardiovascular diseases and age related neurological disorders. Her research aims to characterize the individual components in food, as well as to assess their metabolic fate and bioavailability within the body following ingestion and digestion. This work is done using various analytical chemistry techniques such as high-performance liquid chromatography and mass spectrometry. Currently, she is working on various government and industry funded projects on tropical fruits, berries and apples. Highlights of her two major projects are provided below.

Apple project: The project involves comparison of Arctic (a new variety of apples) with Golden delicious apples at different storage times. The objectives are to characterize the changes in nutrient quality of Arctic apples to golden delicious apples during cold storage, and analytical testing over time following harvest. In addition, preservation of nutritional quality after cutting and packaging the apples was evaluated over 28 days. The quality parameters tested during storage includes measurement of pH, total soluble solids, color, overall quality, and weight change. For the polyphenol compounds, non-targeted analysis using Ultra High Performance Quadrupole Time of Flight Mass Spectrometer (UHPLC-QTOF-MS) and targeted analysis using Ultra High Performance Triple Quadrupole Mass Spectrometer (UHPLC-QQQ-MS) are being used.

Mango project: This project involves characterization of phytochemical profile of mangos consumed in the United States, and to determine the bioavailability and pharmacokinetic parameters of these phytochemicals in plasma of healthy men and women. The use of advanced and sensitive instrumentation such as UHPLC-QTOF-MS and UHPLC-QQQ-MS will help to identify and quantify mango phytochemicals and their metabolites even at very low nanomolar concentrations. In addition, experiments are designed to enhance the bioavailability of polyphenols from mango pulp by adding Vitamin C at a level practical for food service and culinary applications.
Behzad Imanian, BSc in Cell Biology, MSc in Genetics and PhD in Botany from UBC, Canada. Prior to acquiring his doctorate degree, Dr. Imanian worked in the Genome Sciences Center, BC Cancer Agency, Canada, as a computational biologist and research fellow. He helped with the quality control of sequencing of the bovine and spruce genome and transcriptome sequencing projects and the Pleiades Promoter Project, where he contributed in the automation of the promoter design and artificial DNA constructs. His PhD and postdoctoral research explored the genomic consequences of a long-term endosymbiosis between two distantly related eukaryotes, a host dinoflagellate and a diatom symbiont., using large-scale sequencing and analysis of transcripts in this extremely complex biological system. Since March 2016 he is leading the High-Throughput Sequencing (HTS) Initiative in the Institute for Food Safety and Health (IFSH) in the Illinois Institute of Technology (IIT).

The HTS laboratory is well-equipped with advanced HTS sequencers, and it offers a variety of services that include Whole Genome Sequencing (WGS), metagenomics (16s rDNA and shotgun sequencing) for environmental monitoring, transcriptomics (RNA-seq) and other HTS applications. In addition to directing the HTS laboratory, Dr. Imanian has established the bioinformatics facility in IFSH. The facility houses two High Performance Computers (HPC), a third to be added soon. The IFSH bioinformatics facility is capable of providing analytical services from quality control, genome and transcriptome assemblies, SNP analysis, to annotation and much more to all the researchers in the IFSH, IIT, the food industry as well as outside collaborators. The analytical services could be conducted by our bioinformaticians or directly by our collaborators through a private account in our servers. For further information, please contact Dr. Imanian bimanian@iit.edu

Join us for the HTS Symposium!
IFSH.IIT.EDU/NEWS-EVENTS
In this Quarterly Newsletter, our Featured Alumni is Javier Gonzalez, who obtained his Masters of Science in Food Safety and Technology, from Illinois Institute of Technology in 2016. His M.S. research focused on surface decontamination of Listeria on packaged sliced turkey using UV-pulsed light.

Javier became interested in food science at a young age. “Since I was a child I’ve always loved food, years later I started to be more interested in the nutritional aspects which drove me to learn more about how food was made and how the food industry works.” When training for a marathon and CrossFit triathlon, Javier was introduced to the line of RXBAR products. RXBAR produces a variety of bars including: Chocolate Sea Salt, Peanut Butter, Blueberry, Maple Sea Salt, RXBAR Kids Berry Blast to name a few. Javier enjoyed the RXBAR products so much that he researched the company’s core values and philosophy and set his sights on working for the company. As fate would have it, upon graduation in late 2016 Javier secured a position at RXBAR as a Food Safety Scientist. He advanced quickly at RXBAR to his current role as Research Food Scientist at RXBAR. In this role, Javier said, “I do research on the ingredients to better understand how each ingredient impacts the properties of the bars texture, flavor, and shelf life; and, how the ingredients interact with each other. Additionally, I work with our suppliers to optimize the ingredient processing based on our product needs.” His time at IIT prepared him for a successful transition to the workplace. He was given opportunities to learn from distinguished professors and to experience rigorous coursework, Javier specifically mentioned his Food Product Development course as instrumental, during this course he was given real-life challenges and developed innovative new food products. As a result of excelling in the class, Javier was invited back to IIT to serve as a mentor for both the Fall 2017 and Spring of 2018 Food Product Development course offerings.

To connect with Javier please visit his LinkedIn page https://www.linkedin.com/in/javierglezjmenez/
February 24. **DuPage Area STEM Expo Day** at IIT Campus in Wheaton, IL. Dr. Indika Edirisinghe, Dr. Britt Burton-Freeman and Dr. Amandeep Sandhu represented the Center for Nutrition Research and IIT’s Food Science Department at the STEM Expo Day. Participants learned about Food Science and Nutrition and saw first hand how ultrasound technology was used and they were able to view blood vessels, explore their flexibility, and watch blood flow. They also explored a variety of displays that showed how food impacts health and more!

March 6. Armand Paradis, Adjunct Industry Professor, Department Food Science and Nutrition presented to the Illinois Tech Faculty Innovation Grant Committee and invited faculty participants on the successful outcome of the fall 2017 IIT Innovation Grant Award that was applied to the FDSN 508 Food Product Development course. The grant enabled a hands-on student project team experience at the Charlie Bagg’s Innovation Culinary R&D Center (CBIC), Chicago IL. At the end of this course students presented their prototype products made at the CBIC to invited food industry mentors. The grant outcome review meeting was held in Herman Hall to generate increased awareness of these grants and to inspire faculty to seek to ways to offer innovative programs that enhance the Illinois Tech reputation among students seeking an advanced education. [https://web.iit.edu/career-services/faculty-innovation-grants/awarded-projects](https://web.iit.edu/career-services/faculty-innovation-grants/awarded-projects)

March 11. **National Science Foundation Grant Awarded** in the amount of $355,470 for “**REU Site: An Interdisciplinary Research Experience for Undergraduates in Food Safety, Food Engineering, and Nutrition**”. The award will focus on training undergraduate students in food safety, food engineering, and nutrition for a ten-week period during the summer, targeting both students with and without previous research experience. Eight mentors from Illinois Institute of Technology (IIT) and the U.S. Food and Drug Administration will be mentoring ten undergraduate students. Congratulations to Kathiravan Krishnamurthy, Satish Parulekar, Sohail Murad, Fouad Teymour, Britt Burton Freeman, Elizabeth Grasso-Kelley, Nathan Anderson and Seok Hoon Hong for their work on receiving this grant. Learn more about the award at [https://www.nsf.gov/awardsearch/showAward?AWD_ID=1757989&HistoricalAwards=false](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1757989&HistoricalAwards=false)
April 13. IFSH, IIT and FDA staff and students participated in the 5th Annual International Cultural Day. Everyone enjoyed a potluck lunch and talent show.
Graduate Student Seminar Days

April 16 and 17. The Institute for Food Safety and Health Department of Food Science and Nutrition-SAT. Illinois Institute of Technology Ninth Annual Graduate Student Seminar Day. Three awards were given. The award winners were Suxiao Leng for his project on “Evaluating the Inactivation of Norovirus and Hepatitis A Virus on Raspberries by Sanitizer Spray”; Jian Ding for his project “Current Assessment of Food-grade Lubricant Transfer into Foods by Volumetric Piston Filler and Yadwinder Singh Rana for his project “Effect of Shipping Time, Temperature, and Transport Media on Recovery of Listeria monocytogenes from Environmental Swabs.”

Other News

Please check out our partner sites news and events.

FOOD SAFETY & HIGH-THROUGHPUT SEQUENCING

“WHAT DOES THE FUTURE HOLD?”

Perspectives from the Industry, Governmental Agencies and Academia
An IFSH HTS Initiative's Palantir, May 30-31, 2018
Chicago Marriott Southwest at Burr Ridge
Burr Ridge, Illinois

For program details and to register visit the IFSH Events at:
https://www.ifsh.iit.edu/news-events/events