

**IFSH Whole Genome Sequencing for Food
Safety Symposium
SEPTEMBER 28-30, 2016
Chicago Marriott Southwest at Burr Ridge
Burr Ridge, Illinois**

Synopsis: Whole genome sequencing (WGS) has become the preferred method for reliably identifying a foodborne pathogen, finding its sources and implementing proper food safety control procedures. The IFSH Whole Genome Sequencing Symposium will gather leading experts to educate and promote WGS technology among food industry professionals. IFSH aspires to encourage communication and collaborations between government, academic and food industry stakeholders in order to implement cutting-edge methods of detection of foodborne microorganisms causing disease or food spoilage, to formulate rapid responses to any threat to food safety and quality risks.

What to expect: Participants will learn about the fast-developing technologies for WGS, the specific applications and benefits of the IFSH WGS project and the services it provides for the food industry.

- GenomeTrakr is an integrated consortium of the state, federal and international laboratories, initiated by FDA, with a focus on using WGS to catalogue, investigate and pinpoint the sources of foodborne pathogens. An overview of the current state of GenomeTrakr will be presented along with an update on its publicly available and rapidly expanding database that contains the genomic data for thousands of pathogenic bacterial strains including *E. coli*, *Salmonella*, *Listeria* and others. Data submission to this database will be discussed with participants.
- IFSH will present a preview of the current workflow from sample collection to the generation of data, analysis and submission of whole genome sequences to the GenomeTrakr database.
- The food industry's concerns for joining and/or expanding their collaborations with IFSH and FDA will be discussed and addressed.
- Questions to explore in these discussions will include:
 - Unlike PFGE, WGS-based analyses show differences among even the most closely related bacterial strains. How is WGS data interpreted to assign strain difference or sameness?
 - What entails two strains being from a common source versus from two distinct sources?
 - What two different methods of analysis are being used and why?
 - How are regulatory agencies actually applying WGS data in their compliance decision making processes, including its role in recalls, tracebacks, and other actions related to investigations surrounding a potential food contamination event?
 - How could industry partners participate in WGS, contribute to the public database at NCBI and use it to their benefit without potentially aggravating their situation under certain circumstances?

Who should attend: This workshop is for food safety professionals from industry, academia and government in food processing, food safety, quality assurance, regulatory functions, public health administration, and those involved in developing or using pathogen detection equipment and methods.

Location: The symposium will be hosted at the Chicago Marriott Southwest Hotel in Burr Ridge, Illinois.

Web: <http://ifsh-wgs-food-safety-symposium.eventbrite.com>

Contact: Haley Tomlinson at htomlin2@iit.edu or (708) 563-8278 for additional information

AGENDA

IFSH Whole-Genome Sequencing for Food Safety Symposium

Wednesday, September 28, 2016 3:30PM-5:30PM (CST)

TIME	TOPIC
3:30-3:40 pm	Welcome Robert Brackett - IIT VICE PRESIDENT AND IFSH DIRECTOR <i>Illinois Institute of Technology, Institute for Food Safety and Health</i>
3:40-4:00 pm	IFSH Whole Genome Sequencing Initiative for Food Industry Wei Zhang - PROFESSOR OF FOOD SCIENCE Behzad Imanian - PROJECT LEADER, IFSH WGS INITIATIVE <i>Illinois Institute of Technology, Institute for Food Safety and Health</i>
	WGS: Government Perspectives
4:00-4:30 pm	GenomeTrakr: How a Large Network of Sequencing Laboratories is Advancing Food Safety and Public Health Steve Musser – DEPUTY DIRECTOR FOR SCIENTIFIC OPERATIONS, CENTER FOR FOOD SAFETY AND APPLIED NUTRITION <i>Food and Drug Administration</i>
4:30-5:00 pm	WGS at FSIS: Capacity Building for Real-Time Regulatory Application David Goldman - CHIEF MEDICAL OFFICER, FSIS/OPHS <i>US Department of Agriculture</i>
5:00-5:30 pm	Application of WGS in Foodborne Disease Outbreak Surveillance Peter Gerner-Smidt - CHIEF, ENTERIC DISEASES LABORATORY BRANCH <i>Centers for Disease Control & Prevention</i>

Thursday, September 29, 2016 (AM)

8:00-8:30 am	Continental Breakfast
8:30-8:40 am	Agenda & Logistics Wei Zhang - PROFESSOR OF FOOD SCIENCE <i>Illinois Institute of Technology, Institute for Food Safety and Health</i>
	WGS: Food Industry Applications
8:40-9:05 am	WGS in Food Safety Management: Prospects, Challenges and an application for Source Tracking Leen Baert - MICROBIAL & MOLECULAR ANALYTICS, NESTLÉ RESEARCH CENTER David Clifford - FOOD SAFETY EXPERT FOR NESTLE ZONE AMERICAS <i>Nestle</i>
9:05-9:30 am	Whole Genome Sequencing – Application in the Food Industry Robert Baker - DIRECTOR, GLOBAL FOOD SAFETY <i>Mars</i>
9:30-9:50 am	Whole Genome Sequencing – The Food Industry and New Technology Mark Carter - MANAGER OF FOOD SAFETY, FOOD SAFETY PREVENTIVE CONTROLS ALLIANCE <i>Illinois Institute of Technology, Institute for Food Safety and Health</i>
	WGS: Academic Research
9:50-10:15 am	Challenges for Implementation & Interpretation of NGS Data for Regulatory Agencies and Food Industry Andrew Benson - PROFESSOR OF FOOD SCIENCE <i>University of Nebraska Lincoln</i>
10:15-10:30 am	Break
10:30-10:55 am	Genomes to metagenomes for food safety: an ever smaller measuring stick Bart Weimer - PROFESSOR, POPULATION HEALTH & REPRODUCTION <i>University of California Davis</i>
10:55-11:20 am	An Oxymoronic Approach: Using Culture Independent Methods to Describe Culture Dependent Methods Andrea Ottesen - RESEARCH AREA COORDINATOR FOR METAGENOMICS <i>Food and Drug Administration</i>
11:20-11:45 am	Metagenomic Insights into the Role of Probiotics in Tolerance Acquisition against Food Allergy Naseer Sangwan - POSTDOCTORAL RESEARCH ASSOCIATE <i>University of Chicago & Argonne National Laboratory</i>
11:45-12:10 pm	Assembling Whole Genomes from Mixed Microbial Communities Using Hi-C Ivan Liachko - RESEARCH SCIENTIST AT UW GENOME SCIENCES & PRESIDENT/CEO OF PHASE GENOMICS, INC. <i>University of Washington Seattle</i>
12:10-1:00 pm	Lunch

Thursday, September 29, 2016 (PM)

WGS: Methods and Tools and Data

1:00-1:20 pm	<p>The WGS Project at IFSH: The Current Workflow and Services Behzad Imanian - PROJECT LEADER, IFSH WGS INITIATIVE <i>Illinois Institute of Technology, Institute for Food Safety and Health</i></p>
1:20-1:40 pm	<p>Illumina Technology for WGS in Food Safety Kelly Hoon - COMMERCIAL DEVELOPMENT MANAGER, MICROBIAL AND INFECTIOUS DISEASE <i>Illumina</i></p>
1:40-2:00 pm	<p>Genome-Trakr Submission and Data Analysis Ruth Timme - RESEARCH MICROBIOLOGIST Hugh Rand - SUPERVISORY MATHEMATICAL STATISTICIAN AT FDA <i>Food and Drug Administration</i></p>
2:00-2:20 pm	<p>A Simple Pipeline to Assess Genetic Diversity Between Bacterial Genomes Jean-François Pombert - ASSISTANT PROFESSOR OF BIOLOGY <i>Illinois Institute of Technology, Biology Department</i></p>
2:20-2:40 pm	<p>The NCBI Pathogen Detection Pipeline: Providing Freely Available Analysis Reports to Support Public Health William Klimke - NCBI PATHOGEN DETECTION TEAM LEADER</p>
2:40-3:55 pm	<p>Title: Speaker - TBD</p>
3:00-3:15 pm	<p>Break</p>
3:15-3:35 pm	<p>Title: Speaker - TBD</p>
3:35-3:55 pm	<p>Title: Speaker - TBD</p>
3:55-5:15 pm	<p>Open Discussion & QA Session</p> <p>Wei Zhang - PROFESSOR OF FOOD SCIENCE Behzad Imanian - PROJECT LEADER, IFSH WGS INITIATIVE <i>Illinois Institute of Technology, Institute for Food Safety and Health</i></p>
5:15-7:00 pm	<p>Reception & Networking</p>

Friday, September 30, 2016

8:30 am – 2:00 pm

OPEN TO IFSH INDUSTRY PARTNERS ENGAGED IN OR PLANNING TO ENGAGE IN WGS IN THEIR FOOD SAFETY/QUALITY PROGRAMS:

This session will provide a forum for discussion between the stakeholders who have an interest in WGS and its application to ensuring food safety. Industry, government regulators, and official public health authorities will have the opportunity in this session to address issues on data sharing and paths forward toward using WGS by consensus participation to benefit all who are responsible for the safety of foods. The main topic to explore in the discussion is how industry could contribute to the public database at NCBI and use it to their benefit for both quality and safety assurance. It is anticipated that the discussions to take place in this session will help to lay the groundwork toward the collaborative use of WGS data to benefit all involved. Participation at this final session is open only to the stakeholders in government and the food production industry. Agenda details to follow.