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

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Food Safety & High-Throughput Sequencing (HTS)
What Does the Future Hold?

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Synopsis: In the past 15 years, High-Throughput Sequencing (HTS) or Next Generation Sequencing (NGS) has leaped forward and regenerated the word 'Next' many times over. The science and technologies behind HTS have introduced us to a wide variety of new investigative, diagnostic and analytical methods such as Whole Genome Sequencing (WGS), large-scale metagenomics, transcriptomics and phylogenomics. HTS provides an unprecedented power and resolution to positively identify and distinguish closely related strains of bacteria (WGS), to catalogue all the various species in a complex community in an environmental sample (metagenomics), and to detect fluctuations in gene expression as a response to the environmental or developmental changes in an organism's life cycle (transcriptomics). Academic researchers were the first to employ HTS extensively to examine many complicated questions that previously could not have been answered. With its many applications, HTS has replaced or, at least, challenged, changed or is changing the more traditional methods in health and other life sciences. In recent years, HTS has become progressively faster and cheaper, providing increasingly higher quality, longer and larger number of reads, resulting in better resolution and reproducibility. Today, the debate over the superiority of HTS over older methods is conclusively settled, and many governmental agencies have already adopted and implemented it in their inspective and investigative work. A growing number of businesses have also emerged solely to provide HTS sequencing or its related analytical services, and many existing ones have added these services to their menus. Food industry is also showing great interest for this technology and many of its members have already invested in, experimented with or even implemented it in their research and development procedures.

What to expect: In this symposium, we will hold a Palantir and look into the future of HTS in the field of food safety with a focus on its many applications to learn and catalogue, to monitor and control, to combat and modify foodborne microorganisms. The professionals from governmental agencies such as Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC) and US Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS), as well as those of the food industry, tech companies and academia present the news and their views, the current state of affairs, including existing obstacles and possible solutions, with respect to the widespread use and implementation of the HTS technology in their organizations and their perspectives about its future. A panel of experts from the federal agencies, food industry and academia will answer the questions from the attendees and discuss what to expect in the near future when it comes to HTS technology.

Who should attend: This symposium 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: Chicago Marriott Southwest Hotel in Burr Ridge, Illinois.

Web: http://www.marriott.com/hotels/travel/chisw-chicago-marriott-southwest-at-burr-ridge/

Contact: Cindy Koschetz at ckoschet@iit.edu or 708.563.8152 for additional information

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WGS for the Food Industry Symposium Venue

May 30-31, 2018

Chicago Marriott Southwest at Burr Ridge, IL, USA

CHICAGO MARRIOTT SOUTHWEST AT BURR RIDGE

The symposium will be held at **Chicago Marriott Southwest at Burr Ridge**. This category 4 hotel is located at **1200 Burr Ridge Parkway, Burr Ridge, IL 60527**, which is just 21 miles south of the O'Hare International Airport and 13 miles west of the Midway International Airport. The hotel offers over 130 rooms.

We secured a special discounted rate ($ to $ per night based on the type of room) at the hotel. To take advantage of the discounted price, please use the link below.

The discounted rate will be available until May 1, 2017. Therefore, we encourage you to make the reservations ASAP.

To learn more about the hotel, please visit:

- http://www.marriott.com/hotels/travel/chisw-chicago-marriott-southwest-at-burrridge/
- https://www.tripadvisor.com/Hotel_Review-g35742-d483292-Reviews-Chicago_Marriott_Southwest_at_Burr_Ridge-Burr_Ridge_DuPage_County_Illinois.html

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Wednesday, MAY 30, 2018

09:30 - 12:30 Registration, Early Arrival and Exhibitor Networking

11:30 – 12:30 lunch

12:30 - 12:40 Welcoming
Robert Brackett, IIT VICE PRESIDENT AND IFSH DIRECTOR
Institute for Food Safety and Health, Illinois Institute of Technology

12:40 - 13:00 What the Future Hold?
Behzad Imanian, RESEARCH ASSISTANT PROFESSOR, IFSH HTS INITIATIVE
Institute for Food Safety and Health, Illinois Institute of Technology

Governmental Agencies, Future of HTS & Food Safety

USDA FSIS

13:00 - 13:20 Whole Genome Sequencing at FSIS: Current Status
Uday Dessai, SENIOR PUBLIC HEALTH ADVISOR
US Department of Agriculture, Food Safety and Inspection Service

13:20 – 13:40 Implementing Whole Genome Sequencing Data Workflows at USDA FSIS
Labeed Ben-Ghaly, PUBLIC HEALTH SPECIALIST, BIOINFORMATICS
US Department of Agriculture, Food Safety and Inspection Service

NCBI

13:40 – 14:00 New Developments in the NCBI Pathogen Detection Pipeline
William Klimke, NCBI PATHOGEN DETECTION TEAM LEADER
The National Center for Biotechnology Information

14:00 – 14:15 break

CDC

14:15 – 14:35 Update on Implementation of Genomics and Metagenomics in PulseNet
Peter Gerner-Smidt, CHIEF, ENTERIC DISEASES LABORATORY BRANCH
Centers for Disease Control & Prevention

14:35 – 14:55 Detecting and Investigating More and Smaller Outbreaks Using WGS
Robert Tauxe, DIRECTOR, DIV. OF FOODBORNE, WATERBORNE AND ENVIRONMENTAL DISEASES
Centers for Disease Control & Prevention

FDA

14:55 – 15:15 One Health and the Importance of WGS Data-sharing from All Food Sectors
Eric Stevens, STAFF FELLOW
Food and Drug Administration

15:15 – 15:35 The Importance of Environmental Isolates in the GenomeTrakr Database
Marc Allard, SENIOR BIOMEDICAL RESEARCH SERVICES
Food and Drug Administration

15:35 – 15:55 Overview of WGS and Its Role in FDA's Foods Program
Eric Brown, DIRECTOR, DIVISION OF MICROBIOLOGY
Food and Drug Administration

15:55 – 16:10 break

Open Discussion & QA Session

16:10 – 17:50 Governmental Agencies and the Future of Food Safety
Panel of Experts from the Governmental Agencies

18:00 - 20:15 Reception and Networking (TBA)

THURSDAY, MAY 31, 2017

8:00 - 8:30 Continental Breakfast

8:30 - 8:40 Agenda & Logistics
Behzad Imanian, RESEARCH ASSISTANT PROFESSOR, IFSH HTS INITIATIVE
Institute for Food Safety and Health, Illinois Institute of Technology

Governmental Agencies, Future of HTS & Food Safety

FDA

8:40 - 9:00 Metagenomics and the Application of WGS Directly from Foods and Environmental Surfaces
Andrea Ottesen, RESEARCH MICROBIOLOGIST
Food and Drug Administration

9:00 – 9:20 WGS and Important Adaptations of Pathogens in the Produce and Food Production environment
Jie Zheng, MICROBIOLOGIST
Food and Drug Administration

9:20 – 9:40 Genomic Diversity of Foodborne Pathogens from Facility Inspections conducted by FDA
Errol Strain, DIRECTOR, BIOSTATISTICS & BIOINFORMATICS, OFFICE OF ANALYTICS & OUTREACH
Food and Drug Administration

9:40 – 10:00 Title
James Pettengil, GENETICIST
Food and Drug Administration

10:00 – 10:45 **Technology Showcase & Exhibits**

Academia: Future of HTS, Pathogens & Our Responses

ACADEMIA

10:45 – 11:05 Molecular serotyping of *E. coli*, transitioning wasn't supposed to be this hard
Edward Dudley, DIRECTOR, *E. coli* REFERENCE CENTER, ASSOCIATE PROFESSOR OF FOOD SCIENCE
Penn State

11:05 – 11:25 Food Safety Uses of Genomics Tools: What They Can and Can't do
Martin Wiedmann, GELLERT FAMILY PROFESSOR IN FOOD SAFETY, DEPT OF FOOD SCIENCE
College of Agriculture and Life Sciences, Cornell University

Future of HTS & New Technology

TECH COMPANIES

11:25 - 11:45 Next Generation Sequencing for Food Authenticity, Traceability and Safety
Eric Hilligoss, NEXTGEN SEQUENCING TECHNICAL SPECIALIST
Thermo Fisher Scientific, Ion Torrent

11:45 – 12:05 NGS-based Metagenomic Profiling for the Identification of Food Contaminants
Kevin Meldrum, SENIOR DIRECTOR, PRODUCT MARKETING
Illumina

12:05 – 13:00 lunch

13:00 – 13:20 Complete, Correct, Consistent and Contiguous: the 4 C's of Pacbio Microbial Sequencing
Stephen Turner, CHIEF TECHNOLOGY OFFICER, MEMBER OF BOARD DIRECTORS & CO-FOUNDER
Pacific BioSciences

13:20 – 13:40 Rapid real-time Detection and Characterization of Food-borne Pathogens
Iain MacLaren-Lee, SENIOR MARKET DEVELOPMENT MANAGER – AGRIGENOMICS AND FOOD
Oxford Nanopore Technologies

Future of HTS, Food Safety & Food Companies

FOOD INDUSTRY

13:40 - 14:00 Opportunities and challenges of metagenomics in the food industry
Tim Jackson, VICE PRESIDENT, FOOD SAFETY, REGULATORY COMPLIANCE, WORKER WELFARE
Driscoll's of the Americas

14:00 – 14:20 WGS: Bringing Added Value to Microbial Safety in Food Manufacturing
Fabien Robert, ZONE AMS NESTLE QUALITY ASSURANCE CENTER HEAD
Nestle

14:20 – 14:40 Title
Robert Baker, TITLE
Mars

14:40 – 1500 Title
TBD, TITLE
IBM

15:00 – 15:15 break

QA Session & Open Discussion

15:15 - 17:15 Panel of Experts from Industry