

# PulseNet Surveillance for *Listeria*:

## Introduction to Interpretation and Reporting of Whole Genome Sequencing (WGS) Data

Preconference Workshop  
APHL Annual Meeting  
June 2, 2018 • 8:00–11:30 am PT  
Pasadena Convention Center  
Pasadena, CA

**2018 APHL**  
**ANNUAL MEETING**  
and twelfth government environmental laboratory conference



### DESCRIPTION

PulseNet, the National Molecular Subtyping Surveillance Network for Foodborne Disease Surveillance, utilizes DNA fingerprinting to detect clusters of foodborne disease pathogens and is currently undergoing a transformation from pulsed-field gel electrophoresis (PFGE) to WGS methods. This session is designed to provide members with information regarding how surveillance is conducted for *Listeria* now that WGS has replaced PFGE as the primary subtyping method. The emphasis of this session will be to demonstrate data management for PulseNet focusing on WGS data analysis, interpretation, cluster detection and reporting to epidemiologists for national Listeriosis surveillance within the United States.

### OBJECTIVES

At the end of the workshop, the participant will be able to:

- Describe the integration of WGS data for PulseNet *Listeria* surveillance
- Discuss methods to evaluate sequence quality after data is generated from the Illumina MiSeq instruments
- Describe WGS data analysis and reporting tools for PulseNet surveillance
- Describe how WGS data for *Listeria monocytogenes* can be managed locally and submitted to CDC for national surveillance

### AUDIENCE

Members of PulseNet participating laboratories who will be performing and/or supervising WGS-related laboratory and/or data analysis work.

### REGISTRATION

**Registration fee: \$95 per person**

**Register at [www.aphl.org/AM](http://www.aphl.org/AM)**

**SPEAKERS AND AGENDA ►**

## MODERATORS

**Kristy Kubota, MPH** • Manager, PulseNet, Food Safety Program, APHL

**Jennifer Adams** • Lead Specialist, PulseNet QA, Food Safety Program, APHL

## SPEAKERS

**Kelley Hise, MPH** • PulseNet Database Unit Chief, CDC

**Heather Carleton, PhD** • Bioinformatics Coordinator, CDC

**Steven Stroika** • WGS Technical Lead, CDC

**Jasmine Huffman** • Database Manager, CDC

## PROPOSED AGENDA

### Welcome and Introductions

**Overview:** PulseNet Surveillance for *Listeria monocytogenes*: Introduction to WGS analysis tools, BioNumerics 7.6 and wgMLST trees

**Exercise:** Workshop participants will walk through a series of exercises to demonstrate current workflows for WGS data generation, interpretation and reporting to epidemiologists and CDC PulseNet.

**Part 1 Exercise:** A cluster of *Listeria* isolates has been detected by a local PulseNet laboratory. How should the laboratory check quality of the DNA sequence? How will this data be managed locally within BioNumerics? How should the data and information then be sent to local epidemiologists and CDC for national surveillance?

**Part 2 Exercise:** A local cluster of *Listeria* isolates has been detected with matching food isolates. Introduction to NCBI Pathogen Detection pipeline and workflows for analysis. How can a local PulseNet laboratory check for potential matching isolates?

**Part 3 Exercise:** How to efficiently manage, interpret, report and communicate WGS data to local epidemiologists.

### Q and A/Wrap-up

## CONTINUING EDUCATION CREDIT

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