

# 2022 NARMS Technical Workshop

## September 20, 2022

**Summary:** Overview and demonstration of methods, databases, tools, and dashboards used capture whole-genome sequencing (WGS) and antimicrobial susceptibility testing (AST) for pathogens found through NARMS monitoring and surveillance. Participants will learn how to identify NARMS isolates in public databases like NCBI Pathogen Detection, how to find testing results from retail samples and slaughter establishments, and about resources for tracking resistance in isolates from surveillance of human foodborne illnesses.

### 9:00 AM – 9:30 AM: Introduction and Background (Errol Strain)

- 1) Overview NARMS antimicrobials and sample types
  - a. GFI #152 and updates
  - b. Other sources – Cecal, human, water
  - c. Microbial screening and isolation
  - d. Antimicrobial Susceptibility Testing (AST)
- 2) Overview of Sequencing and Antibiotic Sensitive Panels
  - a. Short-Read and Long-Read Sequencing
  - b. Sequencing Data Quality
  - c. Antibiograms (NCBI BioSample)
  - d. Genotype-Phenotype – Minimum Inhibitory Concentration (MIC) Predictions

### 9:30 AM – 12:00 PM: Use Case – See the latest WGS data from each agency

- 1) 9:30 AM – 10:00 AM – FDA – NCBI Pathogen Detection for FDA NARMS Retail Samples (Cong Li)
  - a. NCBI Data Submission
  - b. BioProjects used to capture retail testing data from participating states and territories
  - c. Set up email alerts
- 2) 10:00 AM – 10:30 AM – CDC (Jason Folster)
  - a. How isolate level data gets from SPHL to PulseNet/NCBI to NARMS
  - b. Isolate level resistance data and metadata – what gets released where?
- 3) 10:30 AM – 10:45 AM – Break
- 4) 10:45 AM – 11:10 AM – USDA-FSIS
  - a. NARMS Sample – isolates - WGS at FSIS (Mustafa Simmons)
  - b. FSIS Data – Availability and Formats (James Gallons)
- 5) 11:10 AM – 11:35 AM – USDA-APHIS (Christine Foxx)
  - a. Dashboards and AST trends from participating laboratories
  - b. WGS data collection and NCBI submission
- 6) 11:35 AM – 12:00 AM – Vet-LIRN (Olga Ceric)
  - a. Dashboards and WGS results from Vet-LIRN monitoring and research

### 12:00 PM – 1:00 PM: Lunch

**1:00 PM – 2:00 PM: Use Case – Trend NARMS Data, WGS and AST**

- 1) 1:00 PM – 1:30 PM – FDA NARMS Tableau Dashboards (Amy Merrill)
- 2) 1:30 PM – 2:00 PM – CDC NARMS Now and BEAM (Jared Reynolds)

**2:00 PM – 4:00 PM: Use Case – Analyze WGS data from other sources**

- 1) 2:00 PM – 2:30 PM – FDA NARMS Resistome Tracker (Heather Tate)
- 2) 2:30 PM – 2:45 PM – Break
- 3) 2:45 PM – 3:15 PM – AMRFinderPlus (Mike Feldgarden)
- 4) 3:15 PM – 3:45 PM – Emerging antimicrobial resistance alerts (Jason Folster)