

**Michigan/PulseNet Laboratory and Data Analysis Workshop for Whole Genome Sequencing Using
Illumina Platforms and PN2.0 Analysis Software – June 2025**

Monday, June 2, 2025

8:00 am Report to MDHHS Visitor's Center

8:45 am – 9:00 am Coffee and Introductions

9:00 am – 9:15 am Presentation 1: Introduction to PulseNet

9:15 am – 9:45 am Presentation 2: PulseNet QAQC Program

9:45 am – 11:30 am Presentation 3: WGS Workflow and DNA Prep

11:30 am – 11:45 am Presentation 4: Safety Overview - MI Lab Personnel

11:45 am – 12:45 pm Lunch

12:45 pm – 2:15 pm Demonstration 1 & Lab Exercise: Illumina DNA Prep Library Prep -DNA Dilution and Tagmentation

2:15 pm – 4:30 pm Demonstration 2 & Lab Exercise: Illumina DNA Prep Library Prep – Post-Tagmentation Clean-Up & Amplification

Tuesday, June 3, 2025

8:00 am Report to the MDHHS Visitor's Center

8:30 am – 9:00 am Presentation 5: Setting Up a Run on an Illumina Sequencing Platform

9:00 am - 12:00 pm Demonstration 3 & Lab Exercise: Illumina DNA Prep Library Prep - Post-PCR Clean-up, Pooling and Loading of MiSeq (standard 300 cycle), MiSeq i100 and NextSeq

12:00 pm – 1:00 pm Lunch

1:00 pm – 1:45 pm Presentation 6: Illumina Sequencing Technology Overview

1:45 pm – 2:45 pm Presentation 7: Overview of SAV & Demonstration

2:45 pm – 3:00 pm Break

3:00pm - 5:00 pm Presentation 8 and SAV Exercise 1: Sequencing Analysis Viewer Run Issue Review

Wednesday, June 4, 2025

8:00 am Report to the MDHHS Visitor's Center

8:30 am – 9:00 am Presentation 9: Laboratory Training Facility Tour

9:00 am – 10:45 am Presentation 10: Troubleshooting from DNA Extraction to Sequence Analysis in SAV

10:45 am – 11:00 am Break

11:00 am– 12:00 pm Presentation 11: New Direct from Specimen Subtyping Techniques

12:00 pm – 1:00 pm Lunch

1:00 pm – 1:30 pm Group Photo

1:30 pm – 2:00 pm Presentation 12: Trash or Treasure: Finding Buried Sequencing Treasure Among the Junk

2:00 pm – 3:00 pm Presentation 13 & Exercise 1: Introduction to PulseNet 2.0

3:00 pm- 4:00 pm Presentation 14 & PN 2.0 Exercise 2: Starting a Pipeline

Thursday, June 5, 2025

*Breaks will be provided during morning exercises

8:00 am Report to the MDHHS Visitor's Center

8:30 am – 9:30 am Presentation 15 & PN 2.0 Exercise 3: Viewing the Results from the Pipeline

9:30 am- 10:00 am Presentation 16: Genotyping Tools & ANI: Determination of Serotype, Virulence, Resistance, and MLST Sequence Types Using Sequence Data

10:00 am – 10:45 am Presentation 17 & PN 2.0 Exercise 4: Publishing to and Querying the National Database

10:45 am –11:45 am Presentation 18 & PN 2.0 Exercise 5: Submitting Sequences to NCBI

11:45 am – 12:15 pm Presentation 19: PulseNet Codes (REP, Allele, Outbreak, and POB Codes)

12:15 pm-1:15 pm Lunch

1:15 pm – 2:15 pm Presentation 20 & PN 2.0 Exercise 6: Querying and Managing Local Databases

2:15 pm – 3:15 pm Presentation 21 & PN 2.0 Exercise 7: Cluster Detection and Reporting

3:15 pm – 3:30 pm Presentation 22: PulseNet Communication and SharePoint Site

3:30 pm – 4:30 pm Presentation 23: PulseNet 2.0 Troubleshooting

Friday June 6, 2025

8:00 am Report to the MDHHS Visitor's Center

8:30 am – 9:00 am Presentation 24: Retrieving Data from the Sequencer Instrument(s) & Instrument Maintenance

9:00 am – 9:30 am Demonstration 4: Retrieving Data from the Sequencer Instrument(s) & Instrument Maintenance

9:30 am – 11:30 am Presentation 25 & Exercise 8: Reviewing Training Run Data: FastQC, Sequencing Instrument Run Metrics & SAV, Workbook Completion, Sample Read Metrics, and Fragment Analysis

11:30 am – 12:00 pm Evaluations and Adjourn