**1st PulseNet laboratory workshop for next generation sequencing using the Illumina MiSeq platform**

**August 4-7, 2014**

**Monday, August 4, 2014**

**8:30 am** Report to CDC Visitor’s Center

**9:00 - 10:00 am** Laboratory exercise: DNA extraction using Qiagen DNeasy Blood and Tissue kit until the prot-K incubation step

**10:00 – 11:00 am** Lecture: Overview of the workflow, worksheets, etc.

**11:00 am - 12:00** Lunch

**12:00 – 1:30 pm** Laboratory exercise: finish DNA extraction

**1:30 -2:30 pm** Laboratory exercise: QC DNA extracts

**2:30 – 2:45 pm** Break

**2:45 – 6:00 pm** Demonstration: Nextera XT library prep (setting up sample dilution sheet, picking indices, tagmentation, PCR)

**Tuesday, August 5, 2014**

**8:45 am** Report to the CDC street gate

**9:00 am - 12:00** Laboratory exercise: Nextera XT library preparation (setting up dilutions, tagmentation, adding indices, pcr amplification)

**12:00 – 1:00 pm** Lunch

**1:00 – 2:15 pm Demonstration:** Nextera XT library preparation (post-PCR clean-up, library QC)

**2:15 – 4:15 pm** Laboratory exercise: Nextera XT library preparation (post-PCR clean-up, library QC)

**4:15 – 4:30 pm** Break

**4:30 – 6:00 pm** Demonstration: normalization & pooling, creating a sample sheet on MiSeq, loading the Miseq

**Wednesday, August 6, 2014**

**8:45 am** Report to the CDC street gate

**9:00 am – 12:00pm** Laboratory exercise: normalization & pooling, creating a sample sheet on MiSeq, loading the Miseq

**12:00 – 1:00 pm** Lunch

**1:00 – 3:00 pm** Lecture: Technology overview (Heather and Illumina reps?)

**3:00 - 3:15 pm** Break

**3:15 – 4:45 pm** Lecture: Basic concepts of data analysis

**Thursday, August 7, 2014**

**8:45 am** Report to the CDC street gate

**9:00 am – 11:30 am** Demonstration: data export from Miseq, basic QC, upload of data to BaseSpace, upload of limited metadata to Biosample, upload to SRA

**11:30 am – 12:30 pm** Lunch

**12:30 – 2:00 pm** Demonstration: Sequence data analysis with BioNumerics version 7.5 and CLC Bio Genomics Workbench

**2:00 – 3:00 pm** Troubleshooting

**3:00 – 3:15 pm** Break

**3:15 – 5:45 pm** Laboratory exercise: data export from Miseq, basic QC, upload of data to BaseSpace