

Day 1: Introduction to Genomic Analysis

Morning (9:00am – 12:00pm)

- 09:00 Opening remarks (Eric)
- 09:15 Introduction to Sequence data / pre-processing workflow (Kathleen)
- 09:45 Introduction to Germline variant discovery Best Practices workflows (Eric)
- 10:15 *Coffee/tea break*
- 10:45 Introduction to Somatic variant discovery Best Practices workflows (Eric)
- 11:15 Introduction to pipelining with WDL + Cromwell + FireCloud (Kathleen)
- 11:45 Closing question time

Lunch Time (12:00pm – 1:00pm)

Afternoon (1:00pm – 4:00pm)

- 13:00 Mapping (Kate)
- 13:25 Marking Duplicates (Kathleen)
- 13:50 Base recalibration (BQSR) (Eric)
- 14:15 *Coffee/tea break*
- 14:45 Hands-on IGV + GATK4 basics (Kate leads + others assist)

Day 2: Germline short variant discovery

Morning (9:00am – 1:00pm)

- 9:00 Recap of germline variant discovery Best Practices (Kate)
- 9:15 HaplotypeCaller (Kathleen)
- 9:45 Joint-calling with GenomicsDB + GenotypeGVCFs (Eric)
- 10:15 *Coffee/tea break*
- 10:45 Hands-on joint-calling (Kate leads + others assist)

Lunch Time (12:00pm – 1:00pm)

Afternoon (1:00pm – 4:00pm)

- 13:00 Filtering with VQSR (Eric)
- 13:30 Genotype Refinement (Kathleen)
- 14:00 Callset Evaluation (Kate)
- 14:15 *Coffee/tea break*
- 14:45 Hands-on filtering approaches (Kate + others assist)

Day 3: Somatic variant discovery

Morning (9:00am – 12:00pm)

- 9:00 Recap of somatic variant discovery Best Practices (Eric)
- 9:15 Somatic SNVs and indels with Mutect2 (Kathleen)
- 10:00 *Coffee/tea break*
- 10:30 Hands-on Mutect2 (Kate + others assist)

Lunch Time (12:00pm – 1:00pm)

Afternoon (1:00pm – 4:00pm)

- 13:00 Somatic CNVs with GATK CNV (Kathleen)
- 13:30 Hands-on GATK CNV (Kate + others assist)
- 14:45 *Coffee/tea break*
- 15:15 Preview of upcoming methods: germline CNV and SV (Eric)
- 15:45 Open question time

Day 4: Pipelining

Morning (9:00am – 12:00pm)

- 9:00 WDL/Cromwell 101 (Eric)
- 9:15 Hands-on WDL/Cromwell (Kate + others assist)
- 10:15 *Coffee/tea break*
- 10:45 Self-paced WDL exercises (Kate announce, all trainers assist)

Lunch Time (12:00pm – 1:00pm)

Afternoon (1:00pm – 4:00pm)

- 13:00 FireCloud 101 (Kathleen)
- 13:15 Hands-on FireCloud Part 1 (Kate leads + others assist)
- 14:15 *Coffee/tea break*
- 14:45 Hands-on FireCloud Part 2 (Kate leads + others assist)