



Computational Genomics

An Advanced level Immersion Course for Investigators at UAB

May 14th-17th, 2018 from 8:30-12:30pm

\$50- Faculty, \$25-Post Doc and Fellows, \$10 -Students/Staff

Location: Finley Conference Center
720 20th St. S, Birmingham, AL 35233

[Register Here](#)

This course will provide the end user with a better knowledge of how to analyze their Genomics data using various Linux (command line) based analytical tools. Hands-on activities include analyzing whole genome for causal variants, transcriptome for gene expression, and epigenetics for calling peaks in ChIP/ATAC-Seq.

Learning Objectives:

1. Learn how to use Linux/Unix command line tools to analyze Next Generation Sequencing (NGS) data (whole genome/exome, transcriptome, epigenome).
2. Identify causal variants from whole genome/exome NGS data using Broad's Genome Analysis Toolkit (GATK) Best Practices guidelines.
3. Identify significant genes being regulated in transcriptome studies.
4. Call and annotate peaks from ChIP-Seq and ATAC-Seq studies.



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Genomic Sciences



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Schedule:

	Monday, May 14	Tuesday, May 15	Wednesday, May 16	Thursday, May 17
9:00-10:00	Overview Dr. Bruce Korf 9:00-9:15	Whole Genome Sequencing: Aligning Raw Reads Dr. David Crossman	Whole Genome Sequencing: Identifying causal variants using various databases Dr. David Crossman	Transcriptome: Pathway Analysis of Significant Genes Dr. David Crossman
10:15-11:15	Introduction to UNIX/LINUX and Virtual Machine for Data Analysis Dr. David Crossman 9:15-10:45	Whole Genome Sequencing: Preparing aligned reads with GATK Dr. David Crossman	Transcriptome: Aligning Raw Reads Dr. David Crossman	Epigenetics: Aligning Raw Reads for ChIP/ATAC-Seq Dr. David Crossman
11:30-12:30	Accessing and Submitting Jobs on UAB's Compute Cluster, Cheaha Dr. David Crossman 11:00-12:30	Whole Genome Sequencing: Calling Variants with GATK Dr. David Crossman	Transcriptome: Estimating transcript abundances and differential expression Dr. David Crossman	Epigenetics: Calling/Annotating ChIP/ATAC-Seq peaks Dr. David Crossman

UAB is an Equal Opportunity/Affirmative Action Employer committed to fostering a diverse, equitable and family---friendly environment in which all faculty and staff can excel and achieve work/life balance irrespective of ethnicity, gender, faith, gender identity and expression as well as sexual orientation. UAB also encourages applications from individuals with disabilities and veterans.

For further information please contact Shaila Handattu at hande@uab.edu