HB

Official Biostack Collection

Bioinformatics Engineering

BioData Science

Transcriptomics

Public Health Bioinformatics

Single Cell Technology

Genomics

Microbiology & Metagenomics

Drug Development

Bioinformatics Engineering

Bioinformatics Engineering

Focused on upgrading your existing genomics and transcriptomics data analysis skills for developing software and data infrastructure.

- Pipeline Development
- Workflow Development with Nextflow
- R package development
- Python Library development
- Data Frontend with Shiny
- Bioinformatics on the Cloud; AWS/GCP

Prerequisite:

Genomics, BioData Science

BioData Science

BioData Scientists

Focused on analyzing and visualizing processed scientific data using modern analysis technologies.

- Python
- Virtual Environments
- R and RStudio
- Data Cleaning
- Libraries, Packages and Documentation
- Data Visualization
  - Seaborn
  - ggPlot
- Interactive Dashboard development
- Data Storytelling

Transcriptomics

Transcriptome Data Scientists

Focused on analyzing and interpreting raw RNA-Seq data. Contextual applications in cancer and diagnosis will be offered.

- Unix Operating System
- Born again shell scripting
- Command Line Usage
- Git Version Control
- Pipeline development
- R and RStudio
- Transcriptome-based Drug Target Discovery
- Onco-Transcriptomics
- Biomarker discovery
- Expression quantitative trait loci (eQTL) discovery

Public Health Bioinformatics

Public Health Bioinformaticians

Focused on using genomics to extract epidemiological information from circulating infectious diseases

- R and RStudio
- Visualizing genomic data for common pathogens
- Phylogenetics for public health
- Food Bioinformatics
- Virulence and Resistance
- Discovering new pathogens
- Data Storytelling: From bench to the public

Prerequisite:

Genomics

Genomics

Genome Data Scientists

Focused on analyzing and interpreting whole genome sequence data. Applications in cancer and infections will be offered.

- Unix Operating System
- Born again shell scripting
- Command Line Usage
- Git Version Control
- Pipeline Development
- Phylogenetics
- Genome wide association studies
- Pharmacogenomics
- Oncogenomics
- Bacterial Resistance Genotyping

Microbiology & Metagenomics

Microbe/Metagenome Data Scientists,

Focus on analysing and interpreting high through microbial growth and metagenome data.

- R and RStudio
- R Pipeline Development
- Analysis of Microbial Growth
- Git Version Control
- Microbial Genomics
- Bacterial Resistance genotyping
- Microbiome
- Metagenomics

Prerequisite:

BioData Science

Drug Development

Drug Developer

Focused on identifying potential small-molecule drug candidates for established disease pathways.

- Unix Operating System
- Drug Development Databases
- Machine Learning in Drug Discovery
- Drug Target discovery in cancer
- Structure based Drug Design
- Ligand based drug design
- Pharmacological (ADMET) Screening