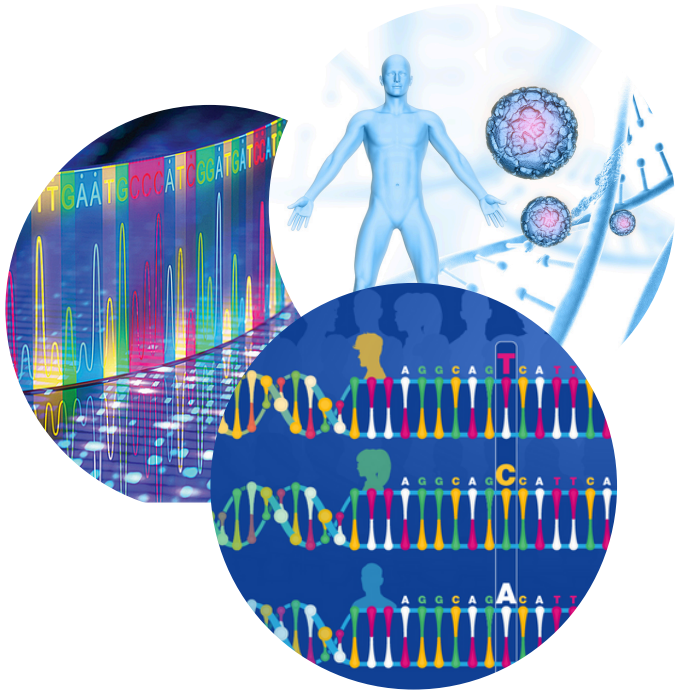
GENESPECTRUM LIFE SCIENCES

GENESPECTRUM Simplify Bioinformatics ACADEMY

Online Workshop on

Analysis and Interpretation of NGS Data in Clinic

From Variant Calling to Clinical Interpretation



About this course: With the advances in Next Generation Sequencing technologies, NGS data analysis has become a very important and critical task in any lab working in Genomics. The tools can be easily made available as most of the tools are open source, but the expertise needed to use these tools and perform NGS data analysis can become a challenging task.

We have designed a **5-week online workshop on the Analysis and Interpretation of NGS Data in Clinic** to help understand precision genomics workflows and reporting. This exciting and informative hands-on workshop is for professionals in clinical, medical, and biomedical genetics who want to learn methodologies for the analysis and interpretation of complex NGS datasets. The workshop will provide a comprehensive overview of the theory and practical approaches to identifying disease-causing variants from NGS data using publicly available computational tools, databases, and pipelines. The workshop will also cover methods of assessing the pathogenicity of a variant following the ACMG-AMP guidelines. During the workshop, participants will learn to identify disease-causing variants from real-world NGS data (targeted gene panel and whole exome sequencing).

Prerequisites:

- Basic understanding of biology and enthusiasm to learn.
- No computing or programming experience is required (we will teach you that).
- A computer with Windows 10 or 11.

Who can take this course: Bachelors and Masters students, Ph.D. Scholars, Medical Doctors working in Clinical Genomics, Researchers and Teachers from Pharma, Biochemistry, Microbiology, Biotechnology and other allied sciences.

Focused Training in Clinical Variant Data Analysis

Detailed Topics

Linux Essentials

- What is Linux?
- Terminal window tricks
- Linux directory structure and Working with files and directories
- Running programs (non-biological aspects)
- Very basics of shell scripting

NGS Data Analysis Workflow

- Sequencing basics
- NGS Data Analysis Overview – File formats and Tools
- QC, Alignment and Visualization of NGS data

Variant Calling

- Germline and Somatic variant calling pipelines
- Variant file format, QC and filtration of variants
- GATK best practices

Variant Annotation and Reporting

- Variant Annotation - Integration of NCBI RefSeq genes, dbSNP, CliniVar, GWAS Associations, Population Databases
- Variant Interpretation - ACMG/AMP Guidelines
- Variant prioritization and reporting

Developing pipelines

- Integration of tools for Variant Analysis to develop a pipeline
- Hosting a pipeline on GitHub

Other details of the workshop:

- **Duration of the course: 21 July to 19 August 2025 | Every Monday and Tuesday | 6:30 to 8:00 PM IST**
- There will be assignments, practice sessions, etc. Participants are encouraged to try the commands and tools during their free time.
- The sessions will be conducted online via WebEx meetings.
- An e-Certificate will be provided to each participant.
- The course material will be provided to each participant on Google Drive.

Registration Fee: Rs 5000 | USD 80 per participant
Early Bird Discount till 10th July : Rs 3500 | USD 60 per participant

FAQ:

1) What is the last date of registration?
Registration is open till 20th July 6 PM IST

2) What if I miss some of the sessions?
We provide a recording of each session. You can watch the recording and complete the topic

3) How can I get answers to my doubts post-session?
You can ask your doubts via email or WhatsApp

For Registration:

- http://www.genespectrum.in/training/clinngs/

For any queries:

- training@genespectrum.in
- Whatsapp - +91 7021386045