

6th National workshop

Next Generation Sequencing Data Analysis: Integrating genomics, transcriptomics and proteomics data for potential therapeutic target discovery

Organized by Biomedical Informatics Centre, ICMR-National Institute of Pathology, New Delhi
26th-1st March, 2018

Next Generation Sequencing (NGS) has brought new paradigm in genomics and transcriptomics data analysis. The application of NGS, mainly through whole-genome (WGS) and whole-exome technologies (WES), has produced breakthrough in understanding complexity of genomes including point mutations, small insertions or deletions, copy number alternations and structural variations in disease conditions. By comparing these alterations to matched normal samples, researchers have been able to distinguish somatic and germ line variants in patient samples. Alongside, the whole transcriptome approach (RNA-Seq) can quantify gene expression profiles, detect alternative splicing, RNA editing and fusion transcripts. The transformative potential of NGS coupled with Bioinformatics analysis showed immediate impact on clinical diagnostics along with focused research to develop personalized treatment strategy.

Recognizing the importance, A National level workshop would be organized by National Institute of Pathology for medical and biomedical faculties, researchers and students with an objective to provide training on next-generation sequencing data analysis. Hands on sessions on NGS data analysis would be conducted through effective use of bioinformatics resources to address complex biological issues.

This workshop is structured as modules consisting of hands on tutorials that would allow a good understanding of:

- (1) NGS technology overview
- (2) Introduction to Linux
- (3) Data analysis using R
- (4) Genome wide association studies
- (5) NGS file formats Quality control: quality/adaptor trimming and filtering of reads
- (6) *De novo* assembly
- (7) Mapping reads to reference genome and Variant calling
- (8) Variant annotation and validation
- (9) RNA-seq analysis: QC, read alignment, differential expression analysis
- (10) Integration of Genomics, Transcriptomics and proteomics
- (11) Validation of differentially expressed genes
- (12)** Dissemination of annotated data through user friendly databases

Who can attend?

M.Sc/M.Tech/M.B.B.S/MD/Ph.D students, Faculty members, Biomedical scientists, Clinicians from any branch of Biomedical sciences or a relevant field. Maximum no. of participants for the workshop would be restricted to 20. Candidate selection will be based on first come first serve basis.

How to Apply?

Candidates interested to participate in the workshop may send their registration form duly filled with prescribed format along with a one-page brief CV through email (drakjain@gmail.com) to Dr A.K. Jain, Organizing Secretary, National Institute of Pathology (ICMR), Safdarjung Hospital Campus, New Delhi-110029 on or before 10/02/2018. Selected candidates will be intimated by 15/02/2018. The details of the workshop could also be found at <http://bmicnip.in/>

Contact No: 011-26198402, E-mail: drakjain@gmail.com.

Registration Fee:

Selected participants have to register for the workshop with registration fee of Rs. 10,000/- by making a Demand Draft (issued by any nationalized bank) in favour of Director, National Institute of Pathology, payable at New Delhi. The registration fee includes registration kit, lectures, hands on practical sessions, tea and lunch. Selected participants have to come with their own laptops.

Note: Participants have to arrange accommodation on their own. No TA/DA will be provided by NIP, New Delhi for attending the workshop.

Registration form

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Name:

Gender:

Educational Qualification:

Current Designation:

Organization:

Address for correspondence:

City:

State:

Mobile:

Email Address:

How the workshop is likely to be useful for you?

Important Information:

- *The hard copy of Demand Draft of Rs. 10000/- should be sent to: **The Director, ICMR - National Institute of Pathology, Safdarjung Hospital Campus, New Delhi – 110029.***
- *Registration form filled in above format, one page CV and scanned copy of Demand Draft should be sent through email to drakjain@gmail.com with the subject "Application for NGS workshop 2018" on or before 10/02/2018.*