



## Next Generation Sequence (NGS) Data Analysis Workshop

September 3-5, 2011

IBAB, Biotech Park, Electronic City, Phase I, Bangalore



### About the workshop

A decade after the first human genome was deciphered sequencing of whole genomes of over 30,000 individuals is expected this year. Sequencing platform companies are starting to churn out 600 gigabases of data per week from a single machine. Many large research establishments are flooding public resources with tens of terabytes of data on diverse biological contexts. The challenge has now shifted to editing/transferring sequence data, filtering noise, analyzing the data and extracting knowledge. NGS technologies cover diverse application areas that include de novo sequencing, genome resequencing, transcriptome sequencing, chip-sequencing and exome sequencing, demanding customized approaches to extract biologically meaningful information. Novel data compression and data analyzing tools for a variety of relevance are proliferating leaving no time for researchers to catch-up with this foray. Much of the future of genomics research may rely on analyzing data already generated.

From the IT and computational skills point-of-view India is ideally positioned to take advantage of this data glut for its research. However, there is a lack of sufficient researchers and trainers with bioinformatics skills necessary to equip students and young researchers to deal with the data analysis challenges of NGS technologies.

A 3 day **competitive** work shop is organized to provide **hands-on training** for students and young researchers to familiarize them with the state-of-the-art tools in the diverse application areas spawned by next generation sequencing technologies. The workshop aims to fill a critical gap created by the spectacular advances in next-generation sequencing technologies and the challenges faced by bioinformaticians in data analyses.

Seats are limited and students will be selected based on one's educational background, prior knowledge on basic programming and the essay. **Travel grants and local hospitality will be provided for select students.**

### Program Highlights

- Day 1: de novo genome sequencing, clinical sequencing, transcriptome sequencing and metagenomics.
- Day 2: evolution of bioinformatics tools and hands-on training on genome assembly, analysis and mining.
- Day 3: cloud computing and hands-on training in transcriptome analysis.

### Tentative List of Experts who will deliver lectures and provide hands -on include:

Dr. Amit Dutt (ACTREC), Mumbai, Dr. S. Sridhar (IGIB), New Delhi, Dr. Malali Gowda (NCBS), Bangalore, Dr. V. Vamsi (Strands Life Sciences), Bangalore, Dr. Ashwin S Seshasayee (NCBS), Bangalore, Dr. Binay Panda, (Ganit Labs, IBAB) Bangalore, Dr. Subhashini Srinivasan (IBAB), Bangalore, Dr. Kshitish Acharya (IBAB), Bangalore.

**About IBAB:** Institute of Bioinformatics & Applied Biotechnology (IBAB) was established in 2001 and is currently functioning from its own large campus in the Biotech park. It has built its reputation and has gained visibility as an institution well known for the excellent education in the interdisciplinary science of bioinformatics and has won appreciation both from industry and academia. IBAB is a "Center of Excellence in Bioinformatics Training and Research" of the DIT, Government of India. The institute is also a "Center of Excellence in Entrepreneurship Education" of the Wadhvani Foundation. IBAB has been receiving support for research through grants from CSIR, DST, DBT & DIT. The institute has been playing an important role in seeding skilled human resources for companies in the area of life sciences and Bio-IT through its excellent and constantly evolving training programs.

**About GANIT labs:** Ganit Labs is a genome sequencing and translational genomics labs located at IBAB and is involved in conducting R&D, training & entrepreneurship activities, and providing core-lab services. The lab uses second generation sequencing instruments, compute clusters and human brains to sequence, analyze and interpret genome data from a variety of organisms. Ganit Labs is an initiative of IBAB and Strand Life Sciences and is established with the financial support from Govt. of India (DIT) and Govt. of Karnataka (Dept. of IT&BT and S&T).

### How to apply

Please send your CV to [ngsibab@ibab.ac.in](mailto:ngsibab@ibab.ac.in) <<mailto:ngsibab@ibab.ac.in>> before August 1, 2011 indicating your level of proficiency in Perl/C/Java/C++ along with a 200 word essay explaining how this program will benefit. Partial financial assistance for travel and local hospitality may be possible for the participants pending grant-in-aid by central agencies. However, the participants have to make their own arrangements for travel and stay.

[www.ibab.ac.in](http://www.ibab.ac.in)

[www.ganitlabs.in](http://www.ganitlabs.in)

