

# NATIONAL LEVEL WORKSHOP ON MICROSCOPY IMAGE ANALYSIS

Sponsored by Pune BioCluster Project Funded by Department of Biotechnology, Government of India.

6 – 8<sup>th</sup> March, 2019.

Application Deadline: 31<sup>st</sup> January, 2019.

Venue: NATIONAL CENTRE FOR CELL SCIENCE, Pune.



# NCCS

## Workshop Overview:

Bio-Imaging Facility at the National Centre for Cell Science (NCCS), Pune, announces a national level hands-on training workshop on “Microscopy Image Analysis”. The workshop will include presentations with practical demonstrations and discussions. The course covers diverse aspects of image analysis of modern biological light microscopy images. This workshop is carried out as a part of the Pune BioCluster initiative funded by the Department of Biotechnology, Ministry of Science & Technology, Government of India.

**Pune BioCluster** was setup in 2018 with the goal of providing the state-of-the-art facility for seamlessly connecting high quality modern biological research being done at various organizations in and around Pune. This is spearheaded by NCCS and Indian Institute of Science Education and Research (IISER) Pune, to eventually focus on questions addressing human disease biology, paving the way for translational research. Bio-imaging facility under the Pune BioCluster initiative aims to develop a national training framework for generating much needed human resources in cell biology.

## About National Centre for Cell Science:

NCCS is an autonomous organisation aided by the Department of Biotechnology, Government of India. It is located within the academically-enriched campus of the S. P. Pune University. Since inception, NCCS has been carrying out cutting-edge research in cell biology and providing valuable services as a national animal cell repository as well as supporting human resource development through various teaching and training programmes. NCCS has been at the forefront of modern basic research in diverse fields of cell biology, especially those addressing paramount human health issues like cancer, metabolic and infectious diseases, and regenerative medicine.

## Topics to be covered:

1. Basics of microscopy and image formation principles.
2. Introduction to image analysis.
3. Basic concepts of digital imaging and data analysis.
4. Image segmentation approaches.
5. Building 3D models from 2D images.
6. Single molecule image analysis and dynamics.
7. Using image analysis to monitor changes over time.
8. Programming imageJ using macros.
9. Hands-on interactive session on image processing and analysis using softwares such as ImageJ/Fiji, Matlab, Imaris, etc.,

## Improve your knowledge and ability to analyse microscopic images:

Use of automated qualitative and quantitative image analysis of biological samples has increased significantly in the recent years.

- This workshop will introduce different image analysis methods available, help acquire practical skills and ability to apply these methods to process and analyse microscopic images.
- You will be exposed to the process of image acquisition, counting objects and tracking movements.
- The course will help assess the appropriateness of different processing and analysis modules for a specific given application.

## Speakers:

Dr. Chaitanya Athale, IISER, Pune.  
Dr. M. V. Krishnasastri, NCCS, Pune.  
Dr. Amitabha Nandi, IIT, Bombay.  
Dr. Aprotim Mazumder, TIFR, Hyderabad.  
Dr. Lakshmi Balasubramanian, NCBS, Bengaluru.  
Dr. Santosh Podder, IISER, Pune.

Dr. Vijay Kumar Krishnamurthy, ICTS, Bengaluru.

Dr. Pramod Pullarkat, RRI, Bengaluru.

## Workshop Webpage:

<https://sites.google.com/site/microscopyatnccs/>

## Application Process:

Applicants can register in following Google form with their full details.

<https://goo.gl/forms/zDMFoCwiSbt9LegC2>

## No Registration Fee for the workshop.

Applicants should provide a paragraph discussing their work and emphasizing the need to undergo ‘Image Analysis Workshop’. Applications received after the due date and incomplete applications without required documents will not be considered.

## Eligibility:

This workshop is primarily intended for early career researchers including doctoral students, post-docs, technical staff and young faculty members involved in light microscopy based research from academic and non-academic institutions.

Maximum 25 participants will be selected through a competitive selection process, based on their application. The small number ensures that every participant individually gets sufficient time for hands-on training sessions. **Preference will be given to the candidates whose research depends on extensive use of microscopy.**

## Travel & Accommodation:

Participants will have to make their own arrangement for travel to and from NCCS, Pune. Accommodation on sharing basis will be provided to out-station participants.

## Important dates:

- Application Deadline: **31<sup>st</sup> January 2019**, Thursday 5.30 PM.
- Names of the selected participants will be displayed on NCCS website & informed via e-mail on or before **11<sup>th</sup> February, 2019**.
- Accommodation details will be intimated on the first week of March, 2019
- Workshop dates: **6 – 8<sup>th</sup> March 2019** (Wednesday – Friday).

## Executive Committee

### Patron

**Dr. Gopal C. Kundu**, Director, NCCS.

### Convener

**Dr. Jomon Joseph**, Scientist-F, NCCS.

### Organizing Secretary

**Dr. Arunkarthick S.**, Scientist-C, NCCS.

## National Advisory Committee

Dr. H. Krishnamurthy, NCBS, Bengaluru.

Dr. Richa Ricky, IISER, Pune.

Dr. Aurnab Ghose, IISER, Pune.

Prof. Nandakumar P., BITS-Pilani, Goa Campus.

Prof. Roop Mallik, TIFR, Mumbai.

## Core Organizing Committee

Dr. M. V. Krishnasastri, NCCS, Pune.

Dr. Manas Kumar Santra, NCCS, Pune.

Dr. Deepa Subramaniam, NCCS, Pune.

Dr. Jyoti Rao, NCCS, Pune.

Dr. Ajay Pillai, NCCS, Pune.

Dr. Gaurav Das, NCCS, Pune.

Dr. Ashwini Atre, NCCS, Pune.

Mrs. Trupti Kulkarni, NCCS, Pune.

**Contact us:** For any queries you may contact:

Dr. Arunkarthick S.: 020-25708288/ 9545108284 / arun@nccs.res.in or

NCCS Imaging Facility: 020-25708265 / [bioimaging.nccs@gmail.com](mailto:bioimaging.nccs@gmail.com)