



Workshop on Flow Cytometry Data Analysis 11-12th Dec, 2013

Venue: CRNN, Calcutta University, Salt Lake City

Fluorescent Activated Cell Sorting (FACS) or Flow Cytometry is widely used in basic and clinical research. To harness the real power of this state of art technique, accurate data analysis of FACS data plays a major role. Correct data analysis is not only important but also critical to adequately identify or functionally characterize the multiple populations of interest within the immune system. In the last few years, the number of parameters (colors) simultaneously used in flow cytometry experiments has increased. This is enabled by the availability of high-end instruments and powerful data analysis tools. In this workshop, we will cover designing and analysis of single or multicolor flow cytometry experiment and guidelines for the correct flow data analysis. Participants will be able to open their FCS files with the data analysis software, explore their data using various display options, perform gating, and quickly generate graphical and statistical reports to identify various population of interest. Participants will also be provided with the knowledge to understand potential technical issues with the data.

PROGRAM

DAY 1

9:30 - 10:00: **Introduction: Basics of Flow cytometry**

10:00 - 11:30: **Designing of a Multicolor Flow Cytometry Experiment and Data**

Acquisition

- How to avoid Garbage In/Garbage Out Phenomenon
- Know your instrument. Instrument Standardization.
- Selection of colors (Panel design)/selection of a right antibodies
- Importance of dead cell marker.
- Experimental controls, Isotype controls, FMO, Biological controls, Internal controls
- Introduction to OMIPs

11:30 - 11:45: **Coffee/Tea Break**

11:45 - 13:15: **Designing of a Multicolor Flow Cytometry Experiment and Data**

Acquisition (contd.)

13:15 - 14:30: **Lunch**

14:30 – 16:00: **Compensation and Visualizing Data (pre/post acquisition compensation)**

- Importance of right Compensation and how to perform it.
- Visualizing Data and Identifying Populations

16:00 - 18:00: **Basics of Flow Data Analysis and Presentation—What to do and what not to do?**

DAY 2

9:30 - 10:00: **Review of the Day 1**

10:00 - 11:30: **Analysis of Flow Data and Reporting Results**

- Discussion about Fundamental Statistics

- Introduction to MiFlowCyte: Data Presentation Guidelines. Discussion of published Flow Cytometry data in order to understand what can be avoided while analyzing and presenting.

11:30 - 11:45: **Coffee/Tea Break**

11:45 - 13:15: **Demonstration of flow data analysis—Cell Cycle (modeled and non-modeled), Proliferation, Apoptosis, histogram subtraction and multicolor assay.**

13:15 - 14:30: **Lunch**

14:30 - 17:00: **Hands on Data Analysis with FCS Express software and Discussion**

17:00 - 17:30: **Test and Valedictory**

Note: Participants are encouraged to bring their laptops with data analysis software and .fcs/.lmd files for analysis and discussion.

