

# IMMU 023: Flow Cytometry: Principles and Methods

**Course Name:** Flow Cytometry: Principles and Methods

**Time:** 9:00am – 4:45pm

\*Subject to change.

## Day 1

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8:45am – 9:00am Bldg 60/Rm 162	<b>Welcome</b>	Rafael Villasmil
9:00am – 10:30am Bldg 60/Rm 162	<b>Introduction to Single Cell Analysis</b>	Rafael Villasmil
10:30am – 10:40am	<b>Break</b>	
10:40am – 12:00pm Bldg 60/Rm 162	<b>Flow Cytometry Experiment Design</b>	Rafael Villasmil
12:00pm – 1:00pm	<b>Lunch</b>	
1:00pm – 2:45pm Bldg 60/Rm 162	<b>High Dimensional Flow Cytometry Tools for Immunophenotyping and Beyond</b>	Kathy McKinnon
2:45pm – 3:00pm	<b>Break</b>	
3:00pm – 4:45pm Bldg 60/Rm 162	<b>Introduction to Imaging Flow Cytometry</b>	luminex

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## Day 2

<b>Time/Location</b>	<b>Group A NHLBI Flow Cytometry Core, Bldg 10 Rm 8C104</b>	<b>Group B NCI CCR VB FACS Core Facility Bldg 41, Rm C310</b>	<b>Group C NEI Flow Cytometry Core, Bldg. 10, Rm. 10N112</b>
9:00am – 12pm	<b>Demonstration of DIVA software and how to set up an experiment (15 color_immunophenotyping), automated compensation using DIVA on BD, SYMPHONY; NHLBI Core Bldg. 10 Room 8C104 (Pradeep Dagur)</b>	<b>Demonstration of DIVA software and how to set up an experiment (15 color_immunophenotyping), automated compensation using DIVA on BD, SYMPHONY; Bldg. 41, Room C310 (Kathy McKinnon)</b>	<b>Demonstration of software and how to set up an experiment (high dimensional human immunophenotyping), automated compensation on CYTOFLEX-LX; NEI Core Bldg 10 Room 10N112 (Aleksander Keselman and Rafael Villasmil)</b>
12:15pm – 1:15pm	<b>Lunch</b>		
1:15pm – 3:15pm Bldg 60/Rm 162	<b>Introduction to Bead based multiplexed Flow cytometry assays and Ultra- sensitive protein assays</b>	Ankit Saxena	
3:15pm – 4:45pm Bldg 60/Rm 162	<b>Cell sorting theory and Instrumentation</b>	Bio-Rad	

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## Day 3

<b>Time/Location</b>	<b>Group A</b>	<b>Group B</b>	<b>Group C</b>
9:30am – 11:30am Bldg 60/Rm 60	<b>MACSQuant Analyzer- Immunophenotyping;</b> (Miltenyi)	<b>Cell Sorter (Bio-Rad S3);</b> (Bio-Rad)	<b>CYTOFELX DNA Content Analysis Cell tracking and Proliferation, Bead based immunoassay;</b> (Beckman Coulter/BioLegend)
11:30am – 12:30pm	<b>Lunch</b>		
12:30pm – 2:30pm Bldg 60/Rm 60	<b>CYTOFELX DNA Content Analysis Cell tracking and Proliferation, Bead based immunoassay;</b> (Beckman Coulter/BioLegend)	<b>MACSQuant Analyzer- Immunophenotyping;</b> (Miltenyi)	<b>Cell Sorter (Bio-Rad S3);</b> (Bio-Rad)
2:30pm – 2:45pm	<b>Break</b>		
2:45pm – 4:45pm Bldg 60/Rm 60	<b>Cell Sorter (Bio-Rad S3);</b> (Bio-Rad)	<b>CYTOFELX DNA Content Analysis Cell tracking and Proliferation, Bead based immunoassay;</b> (Beckman Coulter/BioLegend)	<b>MACSQuant Analyzer- Immunophenotyping;</b> (Miltenyi)

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## Day 4

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8:15am– 8:30am  
Bldg 60/Rm 162

**Laptop setup**

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8:30am – 11:15am  
Bldg 60/Rm 162

**Hands-On Software training:  
Flow Cytometry data Analysis  
using FCS express**

De Novo Software

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11:15am – 12:15pm

**Lunch**

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12:15pm – 3:45pm  
Bldg 60/Rm 162

**Hands-On Software training:  
Flow Cytometry data Analysis  
using FlowJo**

FlowJo

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3:45pm – 4:00pm

**Break**

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4:00pm – 4:45pm  
Bldg 60/Rm 162

**Future of Flow Cytometry;  
Survival tips for the field; Open  
Q/A**

Rafael Villasmil