

## DATOS GENERALES

## Curso académico

<b>Tipo de curso</b>	Microcredencial Universitario
<b>Número de créditos</b>	3,00 Créditos ECTS
<b>Matrícula</b>	350 euros (importe precio público)
<b>Requisitos de acceso</b>	Those interested in basic and clinical applications of flow cytometry
<b>Modalidad</b>	On-line
<b>Lugar de impartición</b>	Online
<b>Horario</b>	Monday-Friday 18.00-20.00 hours

## Dirección

## Organizador

<b>Dirección</b>	José Enrique O'Connor Blasco Catedrático/a de Universidad. Departament de Bioquímica i Biologia Molecular. Universitat de València
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## Plazos

<b>Preinscripción al curso</b>	Hasta 05/11/2022
<b>Fecha inicio</b>	Noviembre 2022
<b>Fecha fin</b>	Diciembre 2022

## Más información

<b>Teléfono</b>	961 603 000
<b>E-mail</b>	<a href="mailto:informacion@adeituv.es">informacion@adeituv.es</a>

## PROGRAMA

## Good Practices in Cytometry

1. FUNDAMENTALS AND APPLICATIONS OF FLOW CYTOMETRY:
  - 1.1 Technical basis of flow cytometry.
  - 1.2 Overview of general applications of flow cytometry.
  - 1.3 Fluorescence and fluorescent markers.
  - 1.4 Components and operation of the flow cytometer: Fluidic System
  - 1.5 Components and operation of the flow cytometer: Optical System
  - 1.6 Components and operation of the flow cytometer: Electronic System
  - 1.7 Generation, Presentation, Storage and Data Management in Flow Cytometry
  - 1.8 Recent technological advances in Flow Cytometry
  - 1.9 Cytometry resources on the Internet.
2. DESIGN AND OPTIMIZATION OF PRE-ANALYTIC EXPERIMENTS:
  - 2.1 Essential issues for experimental design in Flow Cytometry.
  - 2.2 Differential technical characteristics of existing flow cytometers.
  - 2.3 Collection, Storage and Preparation of samples: Clinical cytometry.
  - 2.4 Collection, Storage and Preparation of samples: Basic cytometry.
  - 2.5 Considerations for the selection of reagents for Flow Cytometry
  - 2.6 Internet tools for reagent selection for flow cytometry
  - 2.7 Internet tools for panel design in Flow Cytometry
  - 2.8 Rules for the design and optimization of panels in Flow Cytometry
  - 2.9 Controls in Flow Cytometry
3. DESIGN AND OPTIMIZATION OF EXPERIMENTS-ANALYTICAL PHASE:
  - 3.1 Connecting and disconnecting the cytometer.
  - 3.2 Cleaning and maintenance of the cytometer.
  - 3.3 Standardization and quality control.
  - 3.4 Acquisition of data with the cytometer's software.
  - 3.5 Strategies for population selection (¿Gating¿).
  - 3.6 Fluorescence compensation.
  - 3.7 Cell separation by flow cytometry ("Cell Sorting")
  - 3.8 Occupational Safety Risks and Procedures in Flow Cytometry.
  - 3.9 Detection of common problems and troubleshooting.

#### 4. ANALYSIS, INTERPRETATION AND DATA MANAGEMENT.

4.1 Specific format of final data in flow cytometry (FCS format).

4.2 Conventional statistical methods in flow cytometry.

4.3 Advanced statistical and bioinformatics methods in flow cytometry.

4.4 Specific statistics for the flow cytometry of rare events.4.5 Modeling methods for cell cycle analysis and proliferation by flow cytometry.

4.6 Ratiometric methods in flow cytometry.

4.7 Quantitative flow cytometry

4.8 Fusion of files in flow cytometry and virtual immunophenotype.

4.9 Introduction to cytometer- interfaced software, third-party software and public domain software.

#### 5. PRACTICAL EXERCISES: RESOLUTION OF REAL CASES

5.1 Guided practical exercises of panel design in Flow Cytometry.

5.2 Instructions and recommendations for the use of cytometers own software, commercial licensed software and public domain software.

5.3 Exercises for analysis of real cases optimized for resolution with cytometers own software, commercial software with use license or public domain software.

## PROFESORADO

### **Alberto Álvarez Barrientos**

Responsable de los Servicios de Apoyo a la Investigación - Universidad de Extremadura

### **Guadalupe Herrera Martín**

Técnico/a Superior Personal Técnico de Apoyo. Universitat de València

### **Alicia Martínez Romero**

Responsable del Servicio de Citometría - Fundación de la Comunidad Valenciana - Centro de Investigación Príncipe Felipe Valencia

### **José Enrique O'Connor Blasco**

Catedrático/a de Universidad. Departament de Bioquímica i Biologia Molecular. Universitat de València

### **Jordi Pétriz González**

Jefe de Laboratorio, Grupo de Citómica Funcional - Institut d'investigació contra la Leucèmia Josep Carreras

## OBJETIVOS

Las salidas profesionales que tiene el curso son:

Acquiring experience in Flow Cytometry for basic and clinical applications.

Preparing the ESCCA European Certificate for Cytometry Operators

The general objective of the course is to provide students with specialized knowledge in flow cytometry that will include the correct handling of the instruments, the design and application of cytometric analysis procedures, the acquisition and management of data and the interpretation of results.

## METODOLOGÍA

On-line activities of theoretical type (recorded presentations, videos and access to research articles and reviews) and of practical type (remote connection to cytometer simulators and to operating cytometers,

Off-line study of materials and off-line work on real cytometric data files, guided management of cytometry simulators and resolution computer programs of case studies.