CIC bioGUNE
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

Advanced Training in Cutting-edge Research & Innovation at CIC bioGUNE

1. INTRODUCTION to CIC bioGUNE RESEARCH to NEW PhD STUDENTS

Periodicity: 1 per year; 5 consecutive days
Location: CIC bioGUNE Atrium 801 and Installations/Virtual ZOOM
Synopsis:
Day 1: General presentation of CIC bioGUNE by Scientific Director
Presentation of the Training Program by the Training Committee
Presentation of the Tech Transfer Unit
Short presentation by each new student (5 min each)
Short intro to the Visionary Project to be prepared by the students
Day 2: Introduction to Structural Biology & Prions
Visit to the facilities
Day 3: Introduction to Mol, Cell Biology & Metabolomics Techniques
Visit to the facilities
Day 4: Introduction to the Technological Platforms at CIC bioGUNE
Visit to the facilities
Day 5: Presentation of a research project by each group of students
Prize to best presentation

Open: CIC bioGUNE New PhD students
Mandatory: Mandatory
Language: English
Coordinator: Training Committee

2. THEMATIC COURSES

PhD students should attend a minimum of 80 h in two years.

COURSEWARE may be subjected to Changes during the year, please refer to the Course Calendar published in the CIC bioGUNE Intranet.
Mandatory courses may be added to the list during the year, please refer to calendar and intranet.
Registration for Course attendance is mandatory for all courses through the intranet tool.

MANDATORY COURSES

- **Proteomics**

Felix Elortza.
-Basic Course on Proteomics. 4 hours.

- **Introduction to Bioinformatics,**

Antonio del Sol, Urko M Marigorta, Sacha Yung. 6 hours
-Introductory Course. 6 h. *Every year*

- **Advanced Bioinformatics,**

Antonio del Sol, Urko M Marigorta, Sacha Yung. 6 hours
-Advanced and Real Cases. 12 h. *Every other year*

- **Technology Transfer & Business Development**

Invited speakers, Donatello Castellana.
-Basic ideas and diverse activities. *Every year*. 16 h.

- **Ethics and Compliance.**

Invited speakers, Donatello Castellana. *4h every year.*

OPTIONAL COURSES

- **Mice genotyping and Genomics Technology**

Ana M Aransay.
-Introductory course. 4 h

- **MALDI-TOF imaging**

Felix Elortza.
-Theoretical background: 3 h

- **UPLC-MS Metabolomics**

Juan Manuel Falcón. 4 hours

-Metabolomics applied to cell biology and physiology.
-Metabolomics applied to analytical chemistry.
-Both include Guided visits to metabolomics platform.

- **Immunohistochemistry**

Virginia Gutierrez de Juan, Jorge Simon, Begoña Rodriguez Iruretagoyena.
-Theoretical background: 3 h
-Hands-on activities: 3 h

- **Seahorse-based Assays**

Malu Martínez-Chantar, Teresa Cardoso.
-Applications 4h

- **Immunotherapy**

Asis Palazón, 6 hours

T cell therapy, cancer vaccines and Antibody based immunotherapies

- **B cell responses and Antibody Production**

Juan Anguita. Introductory Course. 8 hours.
-Basis of B cell responses: activation, clonal expansion & memory. Allergy & tolerance.
-Experimental generation of antibodies: types of antigens, adjuvants and immunization regimes
-Polyclonal antibodies in research: species and uses. Purification.
-Monoclonal Ab production: Process & selection, characterization, cloning and humanization. Identification of epitopes.
-Antibody isotypes and their function: human, mouse, rabbit and bovids

- **Computational Chemical Biology**

G Jiménez-Osés. 6 hours
-Introduction and theory, background and general concepts.
-Hands-on demonstration

- **Basic NMR (Principles and Applications)**

***Oscar Millet**. 8 hours*

Introduction of NMR spectroscopy.

- **NMR & Molecular Recognition**

Jesús Jimenez Barbero, Ana Ardá.
- Advanced Course. 8 h

- **Introduction to X-Ray Crystallography - Basics**

Adriana Rojas.
-Introductory Course. 6 h

- **Advanced X-Ray Crystallography**

Adriana Rojas.
-Advanced Course. 6 h

- **Electron Microscopy – Theory and Practise**

Nicola Abrescia, S Connell, M Valle.
-Theoretical & technical background: 4 h
-Hands-on activities & Tutorial: 4 h

- **Oncolytic Viruses for Therapy**

Nicola Abrescia, 2 hours

Principle and application: structural perspective

- **Fundamentals of Glycosciences**

Ana Ardá, Alberto Fernández-Tejada, June Ereño. 9 hours
-Basic course.

- **Experimental models in Biomedicine**

Edurne Berra, 3 hours
-Basic course

- **Intracellular Trafficking**

Aitor Hierro, 4 hours
Basic Principle of vesicle mobility

- **chick CAM system in cancer research**

Robert Kypta, 4 hours
Model for invasion in Cancer Research

- **Extracellular Vesicles**

Juan Manuel Falcón, 4 horas.
Principles and Applications

- **Microbiota**

Hector Rodriguez, 4 hours
Basics and Implications for Health

- **CRISPR-Cas9 technology**

Jim Sutherland, 6 hours
Principles and applications

3. SEMINAR SERIES

- Friday Seminars.

Periodicity: 3 Fridays / month @ 12:00, 1 hour
Location: Atrium 800/ZOOM
Participants: External invited speakers
Synopsis: General topics
Open: Open to external audience
Mandatory: Mandatory for PhD students
Language: English
Coordinator: Begoña Bareño / Training Committee / every PI

- Senior Researchers Seminars.

Periodicity: 1 Friday / month @ 12:00, 1 hour
Location: Atrium 800/ZOOM
Participants: CIC bioGUNE Senior Researchers
Synopsis: General topics
Open: Open to external audience
Mandatory: Mandatory for PhD students
Language: English
Coordinator: Rosa Barrio / Begoña Bareño / Training Committee

- Junior Researchers Seminars

Periodicity: 2 Wednesday / month @ 12:00, 60 minutes
Location: Atrium 800/ZOOM
Participants: CIC bioGUNE Predocs and Postdocs
Synopsis: General topics
Open: Open to CIC bioGUNE personnel
Mandatory: Mandatory for PhD students
Language: English
Coordinator: Donatello Castellana / Iratxe Fernandez/ Training Committee

- UPS Club

Periodicity: Every 4 months; Several groups 20-30 minutes per group
Location: CIC bioGUNE or UPV/EHU or ZOOM
Participants: Groups from CIC bioGUNE, UPV/EHU & other invited researchers; Topics: Ubiquitin and Proteasome System topics
Open: Open to CIC bioGUNE PhD students
Mandatory: Non-mandatory
Language: English
Coordinator: Rosa Barrio