Chromatin Explorer Summer School

3rd-11th July 2025, IDAEA-CSIC, Barcelona (Spain)

Organised by

Institute of Environmental Assessment and Water Research

Institut de Ciències del Mar

EXCELENCIA SEVERO OCHOA

CSIC Consejo Superior de Investigaciones Científicas

EPIBOOST

Join us in this summer school to experience and explore cutting-edge technologies & advancements in low-input chromatin techniques

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Course Overview

Summary

Understanding how chromatin structure regulates gene expression is essential for studying environmental responses. Chromatin accessibility, histone modifications, and protein-DNA interactions shape cellular identity and adaptation to external stressors, making these mechanisms critical in fields like ecotoxicology.

This hands-on course provides training in experimental and computational approaches for profiling chromatin status in rare or sensitive cell populations at both gene-specific and genome-wide levels

What will this course cover?

- Introductory lectures on epigenetic techniques and basic bioinformatic background.
- ATAC-seq to assess chromatin accessibility
- CUT&RUN for precise mapping of histone modifications and transcription factor binding in low-input samples.
- Computational analysis pipelines for processing and interpreting chromatin data in developmental and toxicological contexts.

During the course, the zebrafish model will be used for all the laboratory and bioinformatic analyses.

Who should attend?

Senior PhD students, postdoctoral researchers, and early-career scientists studying chromatin regulation in Environmental Toxicogenomics. Researchers from diverse backgrounds are encouraged to apply.

Course Agenda

	Thursday 3	Friday 4	
9:00 - 10:00	**Course opening**	**Sequencing QC** Bioinformatics	9:00 - 10:00
10:00 - 11:00	**Epigenetic mechanism seminar**		10:00 - 11:00
11:00 - 12:00	**Tea/Coffee**	**Tea/Coffee**	11:00 - 12:00
12:00 - 13:00	**Epigenetic techniques seminar**	**Mapping** Bioinformatics	12:00 - 13:00
13:00 - 14:00	**Lunch 13.00-14.00**	**Lunch 13.00-14.00**	13:00 - 14:00
14:00 - 15:00	**ATAC-seq protocol introduction**		14:00 - 15:00
15:00 - 16:00	**CUT&RUN protocol introduction**		15:00 - 16:00
	Tea/Coffee		
16:00 - 17:00	**UNIX** Bioinformatics		16:00 - 17:00
17:00 - 18:00	**Troubleshooting**		17:00 - 18:00
	Thursday 3	Friday 4	

	Monday 7	Tuesday 8	Wednesday 9	Thursday 10	Friday 11	
9:00 - 10:00	**ATAC**	**CUT&RUN**	**CUT&RUN**	**CUT&RUN** Bioinformatics	**ATAC-seq** Bioinformatics	9:00 - 10:00
10:00 - 11:00						10:00 - 11:00
11:00 - 12:00	**Tea/Coffee**	**Tea/Coffee**	**Tea/Coffee**	**Tea/Coffee**	**Tea/Coffee**	11:00 - 12:00
12:00 - 13:00	**ATAC**	**Poster Presentations** **Lunch 12.00-13.00**	**CUT&RUN** **ATAC:** wrap-up; results; questions	**ATAC-seq** Bioinformatics	**Troubleshooting and** Course Wrap up	12:00 - 13:00
13:00 - 14:00	**Lunch 13.00-14.00**	**CUT&RUN**	**Lunch 13.00-14.00**	**Lunch 13.00-14.00**	**Lunch 13.00-14.00**	13:00 - 14:00
14:00 - 15:00	**ATAC**		**CUT&RUN:** wrap-up; results; questions	**ATAC-seq** Bioinformatics		14:00 - 15:00
15:00 - 16:00	**Tea/Coffee**	**CUT&RUN**	**CUT&RUN** Bioinformatics	**Tea/Coffee**		15:00 - 16:00
16:00 - 17:00	**ATAC**	**Tea/Coffee**	**CUT&RUN** Bioinformatics	**ATAC-seq** Bioinformatics		16:00 - 17:00
17:00 - 18:00		**CUT&RUN**				17:00 - 18:00
	Monday 7	Tuesday 8	Wednesday 9	Thursday 10	Friday 11	

Requirements and Applications

Bioinformatics

Basic R
Basic UNIX

Wet lab

Basic wet lab skills

Applications

or Link

Apply before 19th May!

No fees! Course funded by EPIBOOST

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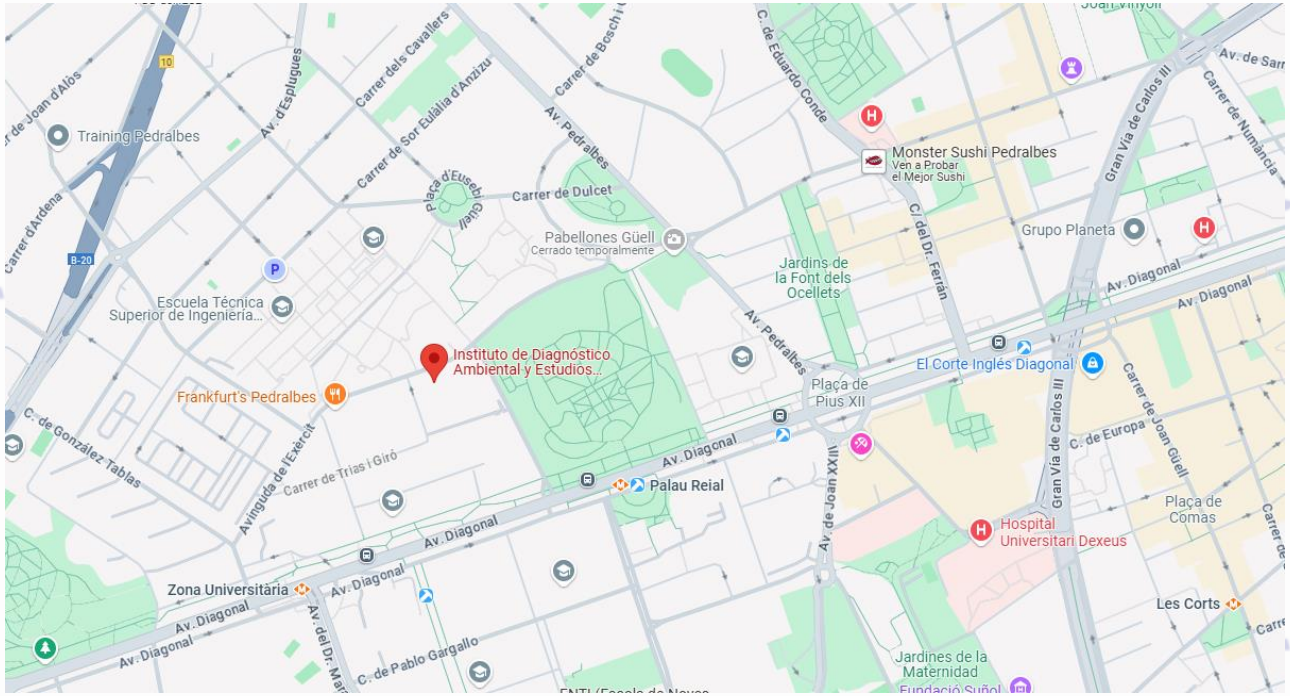
How to arrive

Our location

The Institute of Environmental Assessment and Water Research (IDAEA-CSIC) is located in the Pedralbes neighbourhood, in the upper part of Barcelona. This quiet, residential area is known for its green spaces, historic buildings, and university campuses. Our address is C/ Jordi Girona, 18-26, 08034 Barcelona.

The institute is well connected by public transport: the nearest metro station is Palau Reial (L3 - green line), just a short walk away, and several bus lines stop nearby.



The institute is well connected by public transport: the nearest metro station is Palau Reial (L3 - green line), just a short walk away, and several bus lines stop nearby.

Means of transport closest to our Institute

Underground and tramway stations, and bus stops:

Underground:

- Line 3 Palau Reial Station (exit Av. Diagonal)

Tramway:

- Trambaix T1 Zona Universitària Station
- Trambaix T2 Zona Universitària Station
- Trambaix T3 Zona Universitària Station

Buses:

- H4 (Bon Pastor – Zona Universitària)
- H6 (Fabra i Puig – Zona Universitària)
- 7 (Diagonal Mar – Zona Universitària)
- 33 (Zona Universitària – Verneda)
- 54 (Estació del Nord – Campus Nord)
- 60 (Pl.Glòries – Zona Universitària)
- 67 (Pl. Catalunya – Cornellà)
- 68 (Pl.Catalunya – Cornellà)
- 75 (Les Corts – Av. Tibidabo)
- 113 (Joan XXIII – Barri La Merçè)