NEWSLETTER

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EPIBOOST trains:

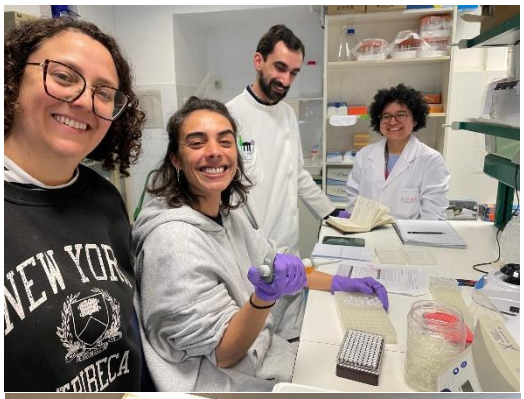
Exchanges

From **3 to 14 February 2025**, early-career researchers from UAVR —Mr **Albano Pinto** (PhD student), Dr **Joana Santos** (CESAM-UAVR), and Dr **Rita Guimarães** (IBIMED-UAVR)— **visited UGent for hands-on training in the bioinformatic analysis of sequencing data** within the EPIBOOST project (Task 2.4).

The training focused on sequences obtained from *Chlorella vulgaris*, *Daphnia magna*, and *Acartia tonsa* (Task 1.2). During the first week, researchers developed a pipeline

for differential DNA methylation analysis using *Daphnia magna* EM-Seq data. The second week was dedicated to adapting this pipeline for *Acartia tonsa* and *Chlorella vulgaris*. Dr Joana Pereira (EPIBOOST scientific coordinator at UAVR) joined the team from 4 to 7 February to support the initial training stage and coordinate next steps with Dr Jana Asselman (EPIBOOST scientific coordinator at UGent), who hosted the exchange.

The training significantly **strengthened UAVR's expertise in sequencing data analysis**, and the bioinformatic pipelines developed during the visit will soon be implemented at UAVR.



João Raio (MSc student, UAVR-CSIC) from March 17th to April 11th 2025 received **training at IDAEA-CSIC** on hands on **high-throughput targeted transcriptomics** and **performed real-time PCR** analysis of sea bass samples from EPIBOOST. He also **attended the RNA-seq bioinformatics workshop** organized by IDAEA-CSIC. During his stay he **presented the results of his work at CESAM-UAVR regarding oxidative stress effects** of cadmium and ciprofloxacin in seabass to the host team in a group meeting.

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Workshops

Dr. Janan Gawra and Dr. Laia Navarro-Martin (IDAEA-CSIC) organized a **two-full days workshop on RNA-sequencing bioinformatics.** A total of 12 participants attended the workshop including 1 technician, 5 Master students, 4 PhD students and 2 postdoctoral fellows. Attendees belonged mainly to IDAEA-CSIC, but one of them belonged to CIIMAR (Portugal) and another one to CESAM-UAVR (João Raio).

New incorporations

Beatriz Lopes (UAVR) joined the team for her BSc thesis in Biology on the epigenetic responses of *Daphnia magna* to ciprofloxacin. She is supervised by Joana Pereira and Joana Santos, with the support of Albano Pinto.

Sofia Valentim (UAVR) joined the team to complete her BSc thesis in Biology on the epigenetic responses of *Phaeodactylum tricornutum* to cadmium and ciprofloxacin. She is supervised by Silja Frankenback and Joana Santos.

Maria Eduarda Rocha (UAVR) joined the team for her BSc graduation project in Biotechnology on the biochemical effects of ciprofloxacin in *Daphnia magna*. She is supervised by Joana Pereira and Joana Santos, with the support of Sérgio Marques and Albano Pinto.

Prinhanik Marlina Widiyanti (IDAEA-CSIC) joined the team for her MSc graduation project in Exploring Target DNA methylation methods for the assessment of pollutant-induced changes in fish. She is supervised by Laia Navarro-Martín and Janan Gawra.

Brian Young (IDAEA-CSIC) is a postdoctoral fellow that joined recently the team to support the histological assessment in sea bass exposed juveniles to cadmium and ciprofloxaxin.

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Communication: presentations and social media

Presentations

Seminar: Epigenetics in Ecological Risk Assessment

On 18 November 2024, Dr Joana Pereira (EPIBOOST scientific coordinator at UAVR) gave a seminar at University of Laussane on the role of epigenetics in environmental research. While widely studied in human health, epigenetic mechanisms such as DNA methylation remain underexplored in ecological risk assessment. Dr Pereira presented how these stable, heritable changes could serve as biomarkers to detect environmental harm in freshwater and marine ecosystems.

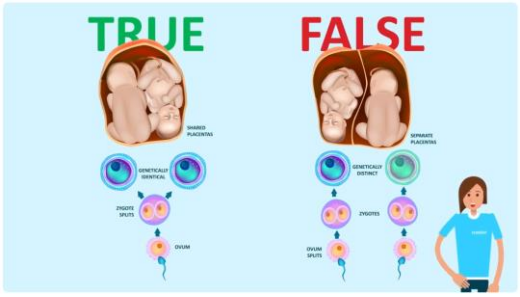
The seminar also introduced the EPIBOOST project, which investigates the effects of environmental stressors on epigenetic patterns in non-human species. The event was open to all scientific community, and about 40 researchers and students from the University of Lausanne and from different associated Research Centres attended.

Social Media

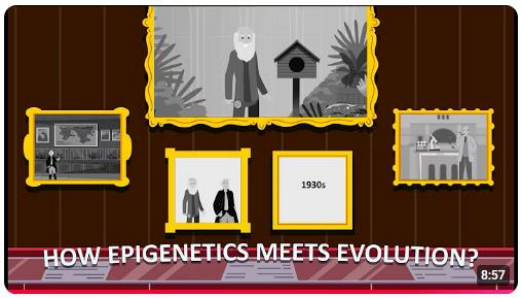
Educational videos

Two of the three educational videos are already available on the EPIBOOST YouTube channel.

The first one, '***What is epigenetics?***', was launched on 26 October 2024. It provides an overview and general introduction to the field, using accessible, non-technical language. Click here to watch.



The second video, '***How epigenetic meets evolution***', explains the main evolutionary theories, from Darwinism to Lamarckism and Neo-Darwinism. Launched on 19 March 2025, it places epigenetics in the context of these theories. Click here to watch.



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Upcoming dates and events

Research session at SETAC

EPIBOOST will be present at **SETAC Europe's 35th Annual Meeting**, taking place this year in Vienna, Austria. Jana Asselman (UGent), Joana Pereira (UAVR) and Laia Navarro-Martin (IDEA-CSIC) will chair a session entitled "***Unveiling Long-Term Ecological Impacts: From Epigenetic Biomarkers to Multigenerational and Chronic Effects of Environmental Contaminants Including Their Mixtures***". Scheduled for 13 May 2025, the session will include both a poster session and several talks.

Click here for more details about the EPIBOOST session at SETAC.

Course at SETAC

There will be also a course chaired by Jana Asselman (UGent), Laia Navarro-Martin (IDAEA-CSIC), and Jessica Head (Mcgill University) entitled ***"Environmental Omics as a Novel Approach methodology"***. The course aims to introduce participants to various omic technologies and how to apply them in their own research. It will take place on 11 May 2025, from 8:30 to 17.30h.

More information about the course available here.

EPIMAR organization and attendance

EPIMAR2025
THIRD INTERNATIONAL SYMPOSIUM ON EPIGENETICS IN MARINE AND AQUATIC RESEARCH
BARCELONA, SPAIN, MAY 27-30

EPIBOOST has been also involved in the preparation of **Third International Symposium on Epigenetics in Marine and Aquatic Research (EPIMAR2025)** set to take place in Barcelona, Spain, from May 27 to 30, 2025. **Noelia Díaz** (ICM-CSIC) and **Laia Navarro-Martín** (IDAEA-CSIC) have been part of the Organizing committee and several Epiboosters will attend the conference presenting the most updated results from the project.

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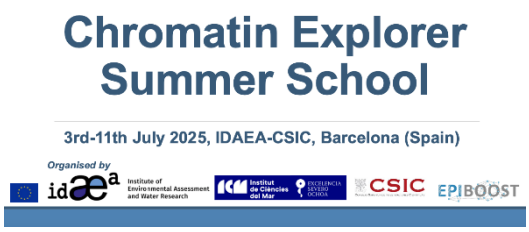
Chromatin Explorer Summer School



IDAEA-CSIC will host in this July the **Chromatin Explorer Summer School**. The course will explore **cutting-edge technologies and advancements in low-input chromatine techniques** and will provide hands-on training in experimental and computational approaches for profiling chromatin status in rare or sensitive cell populations at both gene-specific and genome-wide levels. **Dr Noelia Diaz** (ICM-CSIC) will be the main instructor and **Dr Janan Gawra and Dr Laia Navarro-Martín** (IDAEA-CSIC) will provide support in wet-lab and bioinformatics trainings.

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