



SEMA 2025

**Barcelona, Spain
21-23 May, 2025**

DAY 1 – MAY 21ST WEDNESDAY

Programme

14:30 – 15: 00 Registration

15:00 – 15.15 Opening Ceremony

SESSION 1: GENOMICS, EPIGENETICS AND EVOLUTION

Moderators: M Teresa Roldán (UCO) and Vanessa Valdiglesias (UDC)

15:15 – 16:00 Keynote Lecture: **Aurora Ruiz-Herrera** (Universitat Autònoma de Barcelona) “Genome plasticity in three dimensions: exploring the dynamics of chromatin folding across time-scales and cell types”

16:00 – 16:15 Hannes Van Goethem (UAB – ES) Studying the effects of nanoplastics in the gastrointestinal microbiota of *Mus musculus*

16:15 – 16:30 Zhou Keer (UAB – ES) Studying the effects of Teflon® micro- and nanoparticles on the gastrointestinal microbiota

16:30 – 16:45 Raquel Egea (UAB – ES) Single-cell transcriptomics analysis of ex vivo nanoplastic exposed human whole blood as a model to understand their impact on human health

16:45 – 17:30 Coffee break & Educational resources

Interactive activities: Alba García-Rodríguez (UAB)

SESSION 2: DNA DAMAGE AND REPAIR, GENOME INSTABILITY AND HUMAN DISEASE

Moderators: Maria Sierra (UNIOVI) and Blanca Laffon (UCO)

17:30 – 17:45 Isabel Gaivão (UTAD – PT) Base and nucleotide excision DNA repair mechanisms activity in equines: Insights into disease resistance, longevity, and lifestyle

17:45 – 18:00 Yolanda Lorenzo (UO – Norway) Expression of DNA repair enzyme APE1 in non-cultured and organ cultured corneal- and limbal epithelium

18:00 – 18:15 Elisabet Teixidó (UB – ES) Evaluating the suitability of the alkaline comet assay in HaCaT cells for predicting photogenotoxicity

18:15 – 18:30 Adriana Rodriguez-Garraus (UNAV – ES) Can potassium bromate be used as a positive control in the *in vivo* Fpg-modified comet assay?

18:30 – 18:45 Cristina Camps (UAB-IRSP – ES) DNA damage response inhibitors targeting synthetic lethal interactions for cancer treatment

19:00 – 19:30 Assembly of New Investigators SEMA

20:00 Social activity & dinner New Investigators SEMA





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DAY 2 – MAY 22ND THURSDAY

SESSION 3: HEALTH HAZARD ASSESSMENT OF EMERGING POLLUTANTS

Moderators: Alba Hernández (UAB) and Antonio Guzmán (Alexion)

9:00 – 9:45 Keynote Lecture: **Mariona Bustamante** (ISGlobal) “Chemical exposure in early-life: epigenetic mechanisms and genetic susceptibility”

9:45 – 10:00 Silvia Gascón (UNAV – ES) **Genotoxic characterization of emerging mycotoxins *in vitro***

10:00 – 10:15 Natalia Fernández-Bertólez (UDC – ES) **Biocompatibility and antioxidant potential of nanoceria in human nervous cells**

10:15 – 10:30 Natasha Miranda (UTAD – PT) **Biological impact of the sweetener sucralose – an *in vivo* study in *Drosophila melanogaster***

10:30 – 10:45 Marina Pérez (AIMPLAS – ES) **In vitro bioassays as a tool to evaluate risk assessment of micro and nanoplastics**

10:45 – 11:00 Doaa Abass (UAB – ES) **Intestinal impact of PTFE-derived micro- and nanoplastics**

11:00 – 11:15 Joan Martín-Pérez (UAB – ES) **Size-dependent effects of polystyrene nanoplastics on human primary endothelial cell function**

11:15 – 11:45 Coffee break

SESSION 4: HUMAN BIOMONITORING I

Moderators: Ricard Marcos (UAB) and Natalia Fernández (UCO)

11:45 – 12:30 Keynote Lecture: **Blanca Laffon** (UDC – ES) “Physiopathology of frailty in older adults: development of biomarkers for its early identification”

12:30 – 12:45 Carlota Lema (UDC – ES) **Inflammation and frailty: association of immunological biomarkers with physical and cognitive impairment in older adults**

12:45 – 13:00 Sofía Sierra (PUJ – Colombia) **Analysis of DNA damage by e-cigarettes exposure in a youth population**

13:00 – 13:15 Arnau Rocabert (UAB – ES) **Integrating microbiota profiling in biomonitoring of occupational exposure to micro- and nanoplastics**

13:15 – 14:45 Lunch break

15:00 – 16:30 Social Event – **Visit to Hospital Sant Pau complex**





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SESSION 5: NEW APPROACH METHODOLOGIES IN TOXICITY AND RISK ASSESSMENT

Moderators: Susana Pastor (UAB) and Amaya Azqueta (UNAV)

16:30 – 17:15 Keynote Lecture: **Anna Laromaine** (Institut de Ciència de Materials de Barcelona, ICMA-B-CSIC) “Exploiting *C. elegans* to assess nanotechnology and nanomedicine”

17:15 – 17:30 Myriam Benito (UNAV – ES) ***In vitro* evaluation of genetic instability and cellular transformation capacity as potential biomarkers of non-genotoxic carcinogens**

17:30 – 18:15 Coffee break & Educational resources

Interactive activities: Alba García-Rodríguez (UAB)

18:15 – 18:30 Javier Gutiérrez (UAB – ES) **Long-term exposure to secondary polyethylene terephthalate nanoplastics induces carcinogenesis *in vitro***

18:30 – 18:45 Irene Barguilla (UAB – ES) **Stem cell models to study long-term effects of PS and PET nanoplastics: a focus on cell transformation**

18:45 – 19:00 Claudia Anguita (UAB – ES) **Establishment of a human pulmonary *in vitro* co-culture model for nanoplastic toxicological assessment: Calu-3 and THP-1 macrophages**

20:00 Social Event – Dinner



DAY 3 – MAY 23RD FRIDAY

SESSION 6: ECOTOXICITY AND REPRODUCTIVE TOXICITY

Moderators: Óscar Herrero (UNED) and Isabel Gaivão (UTAD)

9:00 – 9:45 Keynote Lecture: **Nerea Roher** (Universitat Autònoma de Barcelona) “Under the Surface: how the cells from aquatic organisms respond to Polystyrene Nanoplastic Exposure”

9:45 – 10:00 Marlid García (UAB – ES) **Pollutant Partners: Evaluating the combined effects of nanoplastics and phenanthrene in fish models (*Danio rerio*, *Oncorhynchus mykiss*)**

10:00 – 10:15 Laura Rubio (UAB – ES) **Quality evaluation and review of *in vivo* mammalian reproductive and developmental toxicity studies on micro- and nanoplastics**

10:15 – 10:30 Aleix Clarà (UAB – ES) **The impact of nanoplastics on mammalian reproductive function: an *in vitro* study with gametes, embryos and placental cells**

10:30 – 10:45 Mohamed Alaraby (UAB – ES) **Reproductive toxicity of nanomaterials. Silver nanoparticles and *Drosophila* as models**

10:45 – 11:15 Coffee break





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SESSION 7: HUMAN BIOMONITORING II

Moderators: Antonio Guzmán (Alexion) and Adriana Rodríguez (UNAV)

11:15 – 11:30 Kevin Barrios (UAB – ES) **Biomonitoring of human population exposed to micro- and nanoplastics in clear aligners orthodontic treatment. Effects on the oral microbiota: A preliminary sequencing approach using MinION**

11:30 – 11:45 Urszula Bondarow (UAB – ES) **Assessment of micro- and nanoplastic exposure risks using clear dental aligners as a model and salivary white blood cells as biomarkers**

11:45 – 12:00 Jéssica Arribas (UAB – ES) **Genotoxic damage, immunotoxicity, gene expression signature, and circulating miRNAs as biomarkers of nanoplastic exposure: A pilot study in human-exposed population**

SESSION 8: SUMMARIZE YOUR PHD THESIS

Moderators: Raquel Egea (UAB) and Laura Rubio (UAB)

12:00 – 12:10 PhD thesis summary – **Myriam Benito** (UNAV – ES)

12:10 – 12:20 PhD thesis summary – **Natasha Gomes** (UTAD – PT)

12:20 – 12:30 PhD thesis summary – **Silvia Gascón** (UNAV – ES)

12:30 – 12:40 PhD thesis summary – **Javier Gutiérrez** (UAB – ES)

12:40 – 12:50 PhD thesis summary – **Carlota Lema** (UDC – ES)

12:50 – 13:00 PhD thesis summary – **Joan Martín** (UAB – ES)

13:00 – 13:30 Assembly of members

13:30 – 13:45 Awards and Closing



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With the support of the Barcelona City Council



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