



Carlos Simon  
**Foundation**  
FOR RESEARCH IN WOMEN'S HEALTH

3<sup>rd</sup> Edition

# CSF SUMMER SCHOOL

FOR YOUNG SCIENTISTS



## THE SCIENCE BEHIND WOMEN'S TUMORS

**06 - 10**  
JULY JULY

### Description:

Ovarian and uterine tumors represent two of the most common malignancies affecting the female reproductive tract. Integrating liquid biopsy and single-cell methodologies, aims to generate predictive models for differential diagnosis and characterize tumor heterogeneity to guide clinical decision-making.

Through a combination of theoretical and practical sessions and fostering active engagement in scientific discussions, participants will develop a solid understanding of the mechanisms driving tumor development.

### Learning objectives:

- Gain a comprehensive overview of current research initiatives in women's health, with particular emphasis on gynecological tumors.
- Receive detailed guidance and documentation for preparing a research proposal for submission to an Ethics Committee, including study design, ethical aspects, regulatory requirements, participant recruitment strategies, sample collection, and study monitoring.
- Gain insight into the management of human biological samples in research, including the creation of anonymized registries, sample processing, and storage procedures.
- Become familiar with the molecular methodologies and experimental techniques currently employed in our lab.
- Acquire practical experience with cell culture procedures to strengthen hands-on laboratory skills.
- Apply computational methods to analyze sequencing data, facilitating a deeper biological interpretation of the results.
- Learn how to structure and organize data and scientific content for presentation in a research manuscript.

Program Leader

**Dr. Aymara Mas**

Group: Molecular and Cellular  
Origin of Gynecological Tumors



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## Provisional Outline Timetable:



06 JULY

### INTRODUCTORY SESSION AND SAMPLE REGISTRATION PROCESS

- **9:00 - 11:00** | Welcome session at the Carlos Simón Foundation. Introduction to the research team and course overview. Presentation of current research projects & clinical trials
- **11:30 - 13:30** | Management of human samples for research purposes



07 JULY

### MOLECULAR TECHNIQUES FOR LIQUID BIOPSY APPLICATIONS

- **9:00 - 11:00** | Training in blood sample processing, plasma separation, and sample storage
- **11:30 - 13:30** | Introduction to molecular techniques including ctDNA/RNA extraction, quality control assessment, and RT-qPCR analysis



08 JULY

### SINGLE-CELL TECHNIQUES: TUMOR TISSUE HANDLING AND PROCESSING

- **9:00 - 11:00** | Practical introduction to tumor tissue processing, cell and nuclei isolation
- **11:30 - 13:30** | Basic cell culture techniques with primary cells



09 JULY

### ORGANOID-BASED CELL CULTURE TECHNIQUES

- **9:00 - 13:30** | Introduction to three-dimensional (3D) cell culture methods and their applications in biomedical research



10 JULY

### COMPUTATIONAL DATA ANALYSIS AND BIOLOGICAL INSIGHTS

- **9:00 - 12:00** | Application of computational tools for sequencing data analysis
- **12:00 - 13:00** | Interpretation of results and discussion of their biological relevance in the context of scientific publication. Review and discussion of the research topics covered during the week
- **13:00 - 13:30** | Diploma handout and farewell

(\* Please note that this is a sample program. Since this program follows a shadowing format, the proposed activities and schedules may vary depending on the progress or status of the research at the time the course is conducted.