**Module Disciplinaire ED SVSAE**

**optionnel**

**Design your experimental plan in microscopy.**

* ***Target audience:*** *all doctoral students*
* ***Prerequisite:*** *Practicing or having practiced at least one microscopy technique. Have an upcoming or ongoing science project using microscopy.*
* ***Trainers:*** *Manager: Sophie Desset, IR Inserm, (GReD / CLIC). UCA and Microscopy platforms staff of UCA-Partner.*
* ***Duration:*** *20h (one day of conferences "Day of Clermont microscopists" and three ½ days around individual projects (presentation of projects, platform visit, round table and workshops)*
* ***Maximum number of participants****: 12*
* ***Validation:*** *attendance at the full program*
* ***This module takes place every other year***

**GOALS**

* Acquire a method to design a complete microscopy experiment from sample preparation to image analysis integrating the FAIR practices of open science
* Know the microscopy offer of the site.
* Know how to present a scientific project
* Discover techniques or applications in the field of microscopy

**CONTENT**

### The tools to design a microscopy experiment plan

1. Round table (1/2 day).
A round table will bring together doctoral students and staff from microscopy and image analysis platforms. Doctoral students will present their research project to explain their imaging needs. The round t,able will focus on the technological choices and will take into account all the stages of the project which are often poorly anticipated.
2. Anticipating the main stages of an experimental design (1/2 day)

Doctoral students will be asked to consider the limits, reproducibility, best practices and methodology of digital image production and analysis, in order to design a complete microscopy experimental plan. These questions will be addressed through publications proposed in advance for presentation during this half-day event..

1. Case study (1/2 day)

A workshop will be held to design experimental designs from doctoral students' projects.

### Clermont microscopist day

Every two years, the “Clermontois Microscopists Day” brings together users and staff of the site's microscopy facilities. It offers conferences and visit to a technical platform. The conferences present the scientific results obtained with the different equipments or a technological insight on a principle, an application or a recent purchase. The day is rounded off with a workshop on the following day to discover an image acquisition or analysis technique.

Doctoral students are the moderators of the Clermont-Ferrand Microscopists' Day. Those with advanced projects will be able to present their results. The program will be discussed together during the second ½ day.

### Discovering a microscopy technique

Each PhD student will discover at least one unfamiliar technique by visiting a platform at the end of the workshop, or by attending a workshop the day after the JMC.

**METHODS**

* Theoretical training: conferences
* Practical workshops: reverse pedagogy from articles, round table, platform visits.

**SESSION 2023**

*Speakers (provisional list):*

Thierry Astruc (QuaPA, Inrae), Christelle Blavignac (CICS, UCA), Sophie Desset (CLIC, iGReD, Inserm), Géraldine Farge (LPC, UCA), Cédric Peirs (Neurodol, Inserm), Pierre Pouchin (CLIC, iGReD, Inserm), Caroline Vachias (CLIC, iGReD, UCA), Siet Van Den Wildenberg (LPC, UCA).

*dates and places:*

* Friday October 20, 2023, (8h30:12h30, faculty of medicine): Project round table
* Friday November 24, 2023 (8h30:12h30): Best practices workshop and JMC preparation.
* Wednesday November 30, 2023, (9h:18h, Amphi Recherche, Campus Cézeaux): Clermont microscopists day, TIRF and Acoustic Force microscopes visit.
* Friday December 1, 2023, (8h30:12h30): Spinning Disc workshop at the Faculty of Medicine or visit to LPC (1 slot of 1h to 2h / PhD student)
* Friday December 15, 2023, (8h30:12h30): Case study.

Times are indicative (maximum amplitudes). Platform visits may be offered at the end of ½ day.