



2023

Training Calendar



**INSTITUTO
DE INVESTIGAÇÃO
E INOVAÇÃO
EM SAÚDE
UNIVERSIDADE
DO PORTO**

TRAINING AREAS:

BIOIMAGE ANALYSIS

CANCER RESEARCH

CAREER DEVELOPMENT

ETHICS & INTEGRITY

IN VITRO RESEARCH METHODS AND ETHICS

LABORATORY ANIMAL SCIENCE

MICROBIOLOGY

MICROSCOPY

MOLECULAR BIOPHYSICS

NEUROENGINEERING

ORGANOIDS & CELL CULTURE

SCREENING & BIOIMAGE ANALYSIS

TRANSFERABLE SKILLS FOR SCIENTISTS

VISUAL COMMUNICATION

COMPUTATIONAL BIOLOGY, DATA SCIENCE, DATA ANALYTICS

**THE i3S ADVANCED TRAINING UNIT
OFFERS CONTINUOUS, PROFESSIONAL
AND POST-GRADUATE TRAINING IN
SEVERAL RESEARCH AND SUPPORT
AREAS.**



**WWW.I3S.UP.PT/
ADVANCED-TRAINING**



01

JANUARY

**18 JAN, 1 & 15 FEB, 1, 15
& 29 MARCH, 12 APRIL**

TARGET:
i3S PHD STUDENTS

FORMAT:
CLASSROOM COURSE

i3S MEMBERS ONLY

PhD Career Ladder Program for PhD students | 2nd Ed.

TRANSFERABLE SKILLS FOR SCIENTISTS

The PhD Career Ladder Program is a peer-led career mentoring program for grad students and postdocs pursuing careers inside and outside academia. Participants are guided “up the ladder” of career exploration, from self-assessment to career research and informational interviewing, to skillbuilding and resume crafting. The PhD Career Ladder Program is a program that originated at Stony Brook University and received an NSF Innovations in Graduate Education grant.



01

JANUARY

Experimental Design and Analysis of Data from Animal Experiments

| 5th Ed.

LABORATORY ANIMAL SCIENCE

A three-day, face-to-face, highly practical course, aimed at making researchers sufficiently knowledgeable on experimental design and statistics to make results from animal experiments more reliable, robust and reproducible, while avoiding animal waste and complying with the 3Rs of animal research, with particular emphasis on Reduction and Refinement.

24-26 JANUARY

TARGET:

RESEARCHERS RESPONSIBLE FOR DESIGNING AND/OR CARRYING OUT ANIMAL EXPERIMENTS; MEMBERS OF ANIMAL WELFARE BODIES OR COMPETENT AUTHORITIES RESPONSIBLE FOR EVALUATING ANIMAL RESEARCH PROJECTS

FORMAT:

CLASSROOM COURSE

01

JANUARY

JANUARY

TARGET:

MEMBERS THAT WILL CARRY OUT EXPERIMENTAL AND OTHER SCIENTIFIC PROCEDURES ON LIVING ANIMALS

FORMAT:

BLENDED LEARNING, INCLUDING PRACTICAL CLASSES AND TUTOR-LED TRAINING

i3S provides Laboratory Animal Science training solutions for research institutions and animal facilities. To know more please contact us!

i3S MEMBERS ONLY

Introductory Training Laboratory Animal Science

| 35th Ed.

Covers function A and D - Directive 2010/63/EU/ species specific: Mouse, Rat, Zebrafish and Seabass

LABORATORY ANIMAL SCIENCE

This course aims to give new researchers the necessary preparation to do experiments with animals. The legislation (European Directive 2010/63/EU, Decreto-Lei n.º 113/2013) requires that all persons involved in research using animals shall be adequately educated and trained before they perform procedures on animals. This course covers functions: (A) - carrying out procedures on animals / (D) - killing animals and is species specific: mice and rats or zebrafish or seabass.



03

MARCH

13-16 MARCH

TARGET:
ALL SCIENTIFIC
COMMUNITY

FORMAT: ONLINE

Introduction to Python and Machine Learning for the Biosciences | 5th Ed.

**COMPUTATIONAL BIOLOGY, DATA SCIENCE,
DATA ANALYTICS**

Data analysis and machine learning are becoming a core skill for every scientist. This course provides an introduction to a widely-used programming language in science - Python - and introduces the basic concepts of machine learning and data science for the context of the biosciences. This course is for researchers and students (e.g. MSc and PhD) without prior knowledge in Python nor machine learning.

ONLINE COURSE

A background image showing a network of bright, glowing orange and yellow lines against a dark brown background, resembling a microscopic view of biological tissue or a complex material structure.

03

MARCH

Course on **Optical Microscopy Imaging for Biosciences**

| 14th Ed.

MICROSCOPY

A comprehensive light microscopy course that explores the fundamentals of optical microscopy and introduces the state-of-art of advanced fluorescence microscopy techniques. The course will flow from sample preparation to quantitative image analysis. The program includes theoretical lectures taught by specialists in the field and hand-on practical modules supported by the major microscopy companies where the participants will have the opportunity to work with high-end microscopy technology

20-24 MARCH

TARGET:
ALL SCIENTIFIC
COMMUNITY

FORMAT:
CLASSROOM COURSE



03

MARCH

27-28 MARCH

TARGET:

ALL SCIENTIFIC
COMMUNITY

FORMAT:

ONLINE

Calcium imaging analysis of neuronal cultures activity using Fiji/ImageJ

BIOIMAGE ANALYSIS

Assessment of activity dynamics in neuronal cultures is an important step for many in vitro models in neuroscience. Calcium imaging is a popular microscopy technique to infer optically neuronal activity but it involves image analysis knowledge to make the most from the recorded data. This workshop focuses on providing the image analysis concepts and tools to analyse in detail calcium imaging data from neuronal cultures. This is a hands-on workshop using Fiji/ImageJ software to implement the most common steps in a functional imaging analysis workflow (signal pre-processing, noise reduction, filtering, photobleaching correction, registration, normalization, segmentation, and signal visualization).

ONLINE COURSE

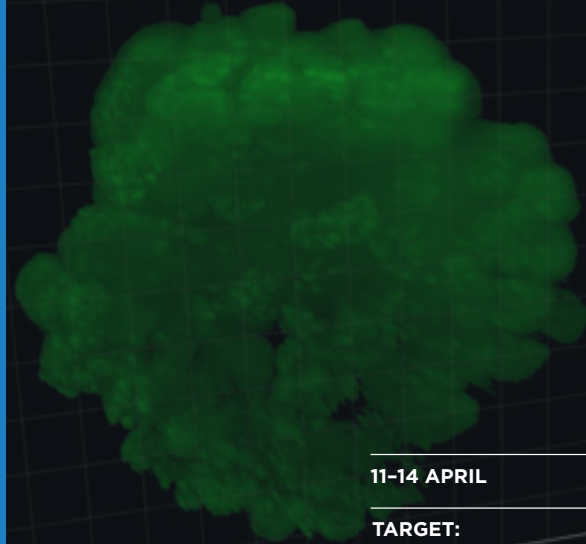
04

APRIL

Advanced Course on Organoid Models | 3rd Ed.

ORGANOIDS & CELL CULTURE

The main aim of this course is to present the fundamentals of organoid models, specifically intestinal, gastric and lung models. Participants will learn the basic principles of working with these models, how to culture and maintain them. Moreover, they will be instructed on how to plan and run experiments using organoids, as well as on methods to analyse experimental data/ results. Microfluidics and organs-on-chip will also be explored. The specific protocols used for imaging, molecular biology and histology using organoids will be covered.



11-14 APRIL

TARGET:
ALL SCIENTIFIC
COMMUNITY

FORMAT:
CLASSROOM COURSE
(INCLUDING PRACTICAL
SESSIONS)

05

MAY

8-19 MAY

FELASA ACCREDITED COURSE

TARGET:

RESEARCHERS RESPONSIBLE FOR DESIGNING AND/OR CARRYING OUT ANIMAL EXPERIMENTS/ ALL SCIENTIFIC COMMUNITY

FORMAT:

CLASSROOM COURSE (INCLUDING LECTURES, E-LEARNING, PRACTICAL SESSIONS, GROUP ASSIGNMENTS AND ASSESSMENT)

Advanced Laboratory Animal Science Course | 35th Ed.

FELASA ACCREDITED COURSE

LABORATORY ANIMAL SCIENCE

Appropriate training in animal biology, experimental techniques, and other relevant topics are a prerequisite for responsible conduct with animals in research. To be considered competent to work with animals, a researcher should have a degree in a life sciences discipline and have participated in a Laboratory Animal Science course. This course covers Functions A, B, and D of the European Directive 2010/63 for the animal species mouse, rat, zebrafish and fish. IBMC/i3S runs the only FELASA accredited course in Portugal since 2008, currently aligned with the structure defined in article 23 of the aforementioned Directive. The course will give you the necessary training to obtain a permit to work with animals in most European countries.



05

MAY

Hands-on course in transgenesis and mutagenesis in zebrafish

1st Ed.

GENETICS

This hands-on course will focus on the training in genetic manipulation of zebrafish, including techniques for transgenesis and mutagenesis. The participants will be offered theoretical and practical sessions on Tol2-mediated transgenesis, and CRISPR/Cas9-mediated genome editing. Microinjection into zebrafish embryos will be covered, as well as previous preparation of RNA or DNA to inject and subsequent screening to identify positive founder fish.

22-26 MAY

TARGET:
ALL SCIENTIFIC
COMMUNITY

FORMAT:
CLASSROOM COURSE

06

JUNE

JUNE

TARGET:

i3S MEMBERS THAT WILL CARRY OUT EXPERIMENTAL AND OTHER SCIENTIFIC PROCEDURES ON LIVING ANIMALS

FORMAT:

BLENDED LEARNING, INCLUDING PRACTICAL CLASSES AND TUTOR-LED TRAINING

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This course aims to give new researchers the necessary preparation to do experiments with animals. The legislation (European Directive 2010/63/EU, Decreto-Lei n.º 113/2013) requires that all persons involved in research using animals shall be adequately educated and trained before they perform procedures on animals. This course covers functions: (A) - carrying out procedures on animals / (D) - killing animals and is species specific: mice and rats or zebrafish or seabass.

Advanced Laboratory Animal Science Course | 36th Ed.

FELASA ACCREDITED COURSE

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09

SEPTEMBER

11-22 SEPTEMBER

**FELASA ACCREDITED
COURSE**

TARGET:

RESEARCHERS
RESPONSIBLE FOR
DESIGNING AND/OR
CARRYING OUT ANIMAL
EXPERIMENTS/
ALL SCIENTIFIC
COMMUNITY

FORMAT:

CLASSROOM COURSE
(INCLUDING LECTURES,
E-LEARNING, PRACTICAL
SESSIONS, GROUP
ASSIGNMENTS AND
ASSESSMENT)





09

SEPTEMBER

25-28 SEPTEMBER

TARGET:

ALL SCIENTIFIC
COMMUNITY

FORMAT:

CLASSROOM COURSE

Workshop on Cancer Research Biology: Biological & Molecular Basis 12th Ed.

CANCER BIOLOGY

This workshop is focused on Cancer Research addressing the key cellular and molecular mechanisms underlying cancer development and progression. I3S researchers with expertise in the different topics of cancer research will present theoretical and practical sessions. This cancer research workshop will focus on the state-of-the-art and address technical and methodological approaches.

A microscopic image of biological tissue, possibly muscle or connective tissue, with cyan highlights indicating specific structures or cells. The image is dark with bright cyan lines and spots, creating a complex, fibrous pattern.

10

OCTOBER

Introduction to Digital BioImage Analysis | 5th Ed.

**COMPUTATIONAL BIOLOGY, DATA SCIENCE,
DATA ANALYTICS**

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ONLINE COURSE

9-13 OCTOBER

TARGET:
ALL SCIENTIFIC
COMMUNITY

FORMAT:
ONLINE



10

OCTOBER

16-19 OCTOBER

TARGET:

ALL SCIENTIFIC
COMMUNITY

FORMAT:

ONLINE

Introduction to Python and Machine Learning for the Biosciences

| 6th Ed

COMPUTATIONAL BIOLOGY, DATA SCIENCE,
DATA ANALYTICS

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ONLINE COURSE



10

OCTOBER

Course on **Atomic Force Microscopy applied to Life Sciences** | 3rd Ed.

MICROSCOPY

Atomic Force Microscopy (AFM) has been revealed as a powerful tool to study human pathology, since it is suitable to perform studies on different molecules, and cell/ tissue types in physiological conditions. In this training, participants will be introduced to the Atomic Force Microscopy /Inverted fluorescence microscopy techniques, having the opportunity to learn about the determination of morphometric parameters to the characterization of biomechanical properties of cells.

Participants will learn how to use different software for the analysis of the data arising from these studies. Applets software will be used to analyse the force-distance curves, to calculate the mechanical properties of the samples.

25-27 OCTOBER

TARGET:
ALL SCIENTIFIC
COMMUNITY

FORMAT:
CLASSROOM COURSE

11

NOVEMBER

NOVEMBER

TARGET:

i3S MEMBERS THAT WILL CARRY OUT EXPERIMENTAL AND OTHER SCIENTIFIC PROCEDURES ON LIVING ANIMALS

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The i3S reserves the right to cancel courses or change courses' dates and adjust calendar to institutional training demands.

**WWW.I3S.UP.PT/
ADVANCED-TRAINING**

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