



2022

# Training Calendar



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

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**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

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**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

13, 14, 19, 20 AND 21  
JANUARY

**TARGET:**

RESEARCHERS AND  
COMMUNICATORS.  
WE STRIVE FOR A  
DIVERSE AUDIENCE,  
RANGING FROM  
MASTER'S STUDENTS  
TO ESTABLISHED  
RESEARCHERS AND  
FROM ALL ACADEMIC  
AREAS.

**FORMAT:**

CLASSROOM COURSE

## Triggers and Trends in Communicating Science for Society | 1st Ed.

### ETHICS AND WELFARE

This interactive and interdisciplinary workshop is designed to provide the participants an up-to-date understanding of science in society and develop the necessary skills for participating actively as academics in the contemporary discussion. The workshop has a strong hands-on component in which participants work together in interdisciplinary groups around case studies, developed as science communication activities.

# PhD Career Ladder Program\_PhD students

| 1st Ed.

## CAREER DEVELOPMENT

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 skill-building 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

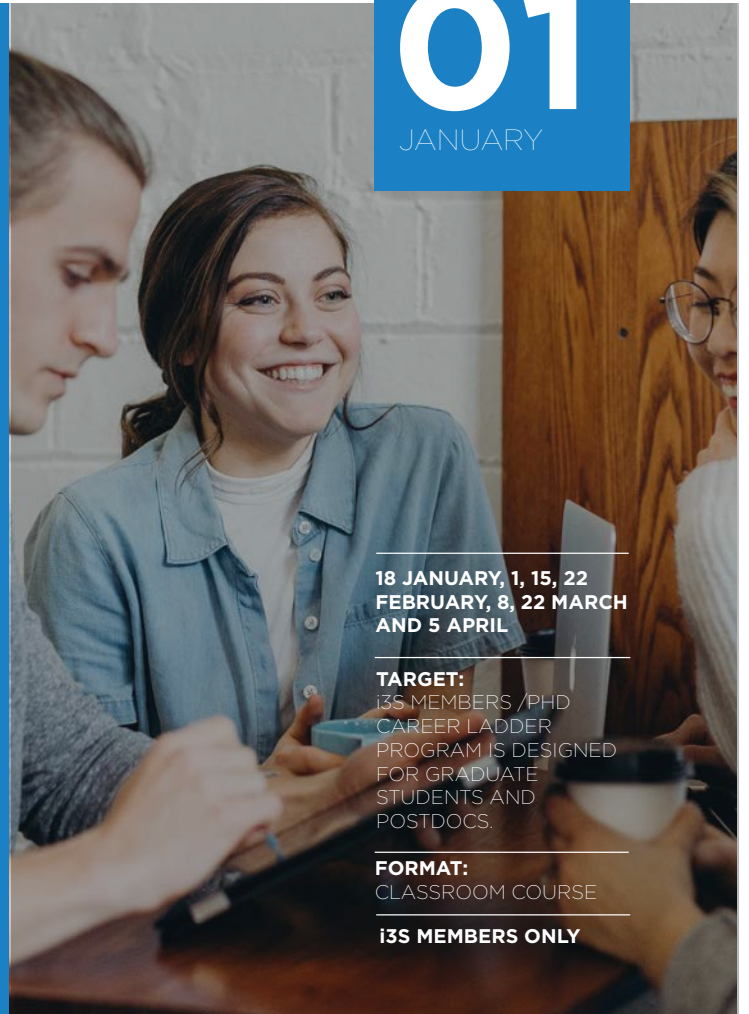
JANUARY

**18 JANUARY, 1, 15, 22  
FEBRUARY, 8, 22 MARCH  
AND 5 APRIL**

**TARGET:**  
135 MEMBERS /PHD  
CAREER LADDER  
PROGRAM IS DESIGNED  
FOR GRADUATE  
STUDENTS AND  
POSTDOCS.

**FORMAT:**  
CLASSROOM COURSE

**135 MEMBERS ONLY**



# 01

JANUARY

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## JANUARY - MARCH

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### TARGET:

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

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### FORMAT:

BLENDED LEARNING, INCLUDING PRACTICAL CLASSES AND TUTOR-LED TRAINING

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

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**i3S MEMBERS ONLY**

# Introductory Training Laboratory Animal Science

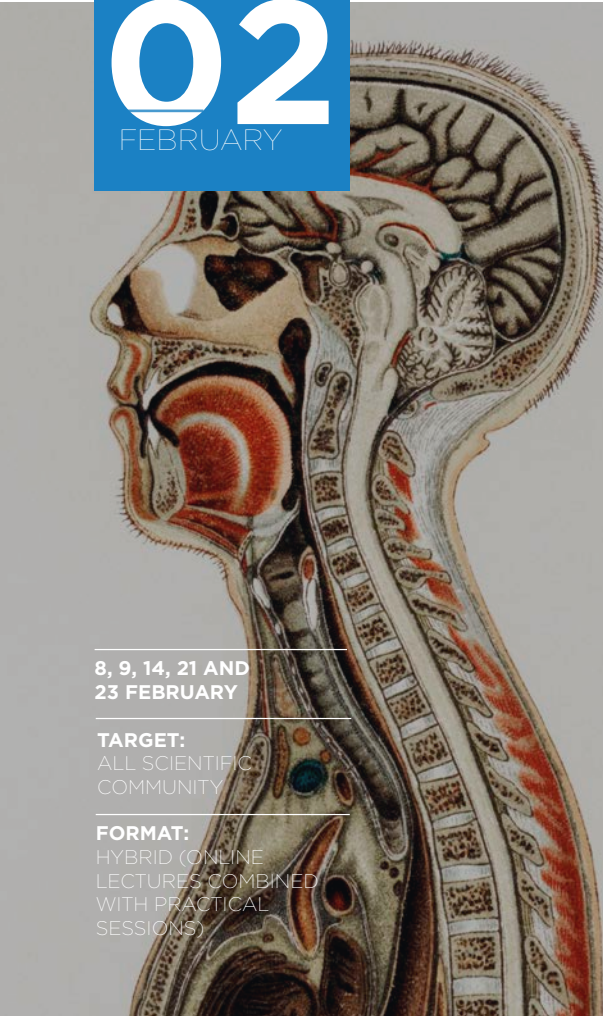
## 32<sup>nd</sup> Ed.

Species Specific: Mice and Rats or Zebrafish or Seabass

### LABORATORY ANIMAL SCIENCE

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

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.



02  
FEBRUARY

8, 9, 14, 21 AND  
23 FEBRUARY

**TARGET:**

ALL SCIENTIFIC  
COMMUNITY

**FORMAT:**

HYBRID (ONLINE  
LECTURES COMBINED  
WITH PRACTICAL  
SESSIONS)

# Workshop: Introduction to information design for life sciences | 2<sup>nd</sup> Ed.

## VISUAL COMMUNICATION

Information design is the practice of transforming data into information and presenting it in a way that is accurate, clear, meaningful, engaging and easily absorbed. It is the application of processes and practices of design to communicate information. The ability to visualize and communicate information evolved alongside science itself. Nowadays, in an era of massive amounts of data and extremely complex processes, the application of information design in science is more urgent and challenging. This workshop, using a practical approach, will explore the application of information design principles to the life sciences.

# Experimental Design and Analysis of Data from Animal Experiments | 4<sup>th</sup> Ed.

## LABORATORY ANIMAL SCIENCE

A three-day face-to-face 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.

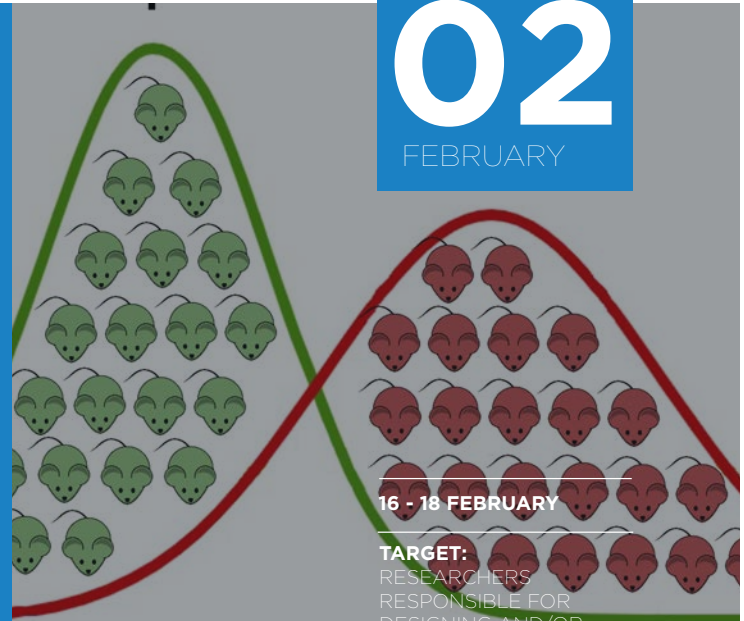
# 02

FEBRUARY

16 - 18 FEBRUARY

**TARGET:**  
RESEARCHERS RESPONSIBLE FOR DESIGNING AND/OR CARRYING OUT ANIMAL EXPERIMENTS. IT IS ALSO RECOMMENDED FOR MEMBERS OF ANIMAL WELFARE BODIES OR COMPETENT AUTHORITIES RESPONSIBLE FOR EVALUATING ANIMAL RESEARCH PROJECTS.

**FORMAT:**  
CLASSROOM COURSE



A grayscale microscopic image of a multi-well plate. Several wells are visible, each containing a cluster of cells. Some cells exhibit bright, multi-colored fluorescence (green, red, blue) against a dark background, while others are less distinct. The wells are arranged in a grid pattern.

# 03

MARCH

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**14 - 18 MARCH**

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**TARGET:**  
ALL SCIENTIFIC  
COMMUNITY

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**FORMAT:** ONLINE

# Introduction to Python and Machine Learning for the Biosciences

| 3<sup>rd</sup> Ed.

**SCIENTIFIC PROGRAMMING  
AND DATA ANALYSIS**

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**

# Course on Optical Microscopy Imaging for Biosciences

| 13<sup>th</sup> Ed.

## MICROSCOPY

The course will present the state-of-art light microscopy techniques applied to study live cells and subcellular structures into different contexts (e.g., 2D and 3D culture systems, tissue explants, small model organisms, etc...). The program includes theoretical lectures headed by field specialists and live virtual practical modules which will offer the participants the opportunity to contact cutting-edge microscopes learn how to manage live samples under the microscope, and to get initiated into multidimensional image data analysis.

# 03

MARCH

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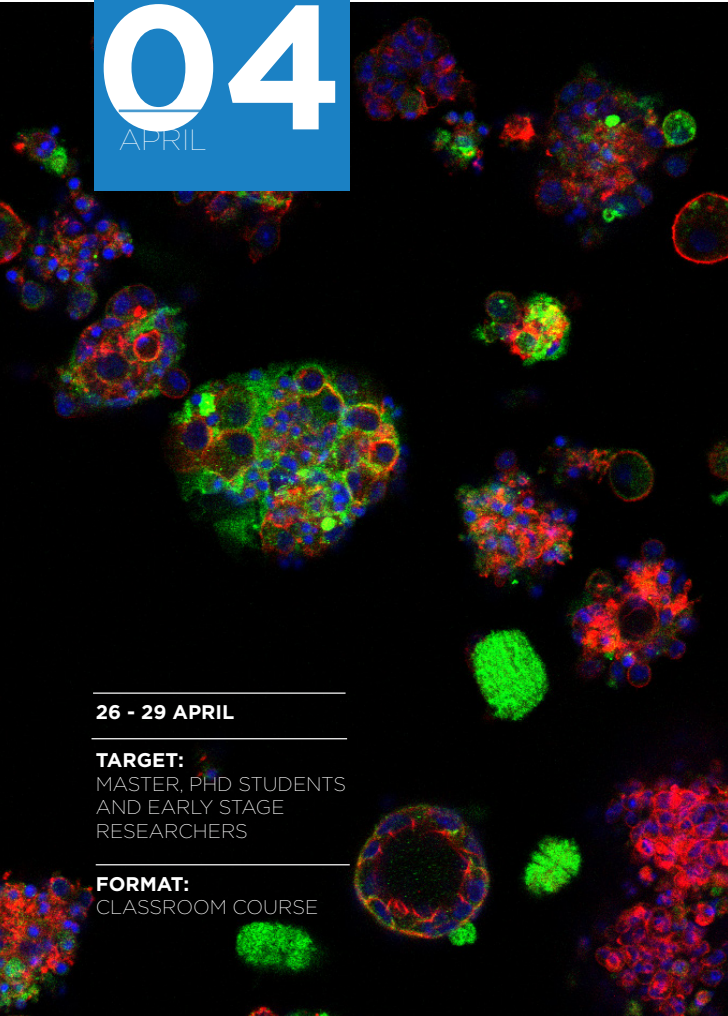
**28 MARCH - 1 APRIL**

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**TARGET:**  
ALL SCIENTIFIC  
COMMUNITY

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**FORMAT:**  
CLASSROOM COURSE

A large, vertical fluorescence microscopy image of organoids, likely intestinal or gastric, showing various cell types stained with red, green, and blue dyes. The organoids are clustered and vary in size, with some showing distinct internal structures.

04  
APRIL

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**26 - 29 APRIL**

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**TARGET:**

MASTER, PHD STUDENTS  
AND EARLY STAGE  
RESEARCHERS

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**FORMAT:**

CLASSROOM COURSE

# Advanced Course on Organoid Models | 1<sup>st</sup> Ed.

## BIOENGINEERING AND ORGANOID

The main aims of this course is to present the fundamentals of organoid models work, specifically with intestinal, gastric and lung models. Participants will learn about 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, and on methods to analyze experimental data/ results. The specific protocols used for imaging, molecular biology and histology using organoids will be covered.

# Advanced Laboratory Animal Science Course | 32<sup>nd</sup> Ed.

## LABORATORY ANIMAL SCIENCE

Appropriate training in animal biology, experimental techniques, and other relevant topics are a prerequisite for responsible conduct with animals in research. In Europe, the standard for such training is set by FELASA (Federation for European Laboratory Animal Science Associations). 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, and in 2018 with the renewal, training is now 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

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**9 - 20 MAY**

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**FELASA ACCREDITED  
COURSE**

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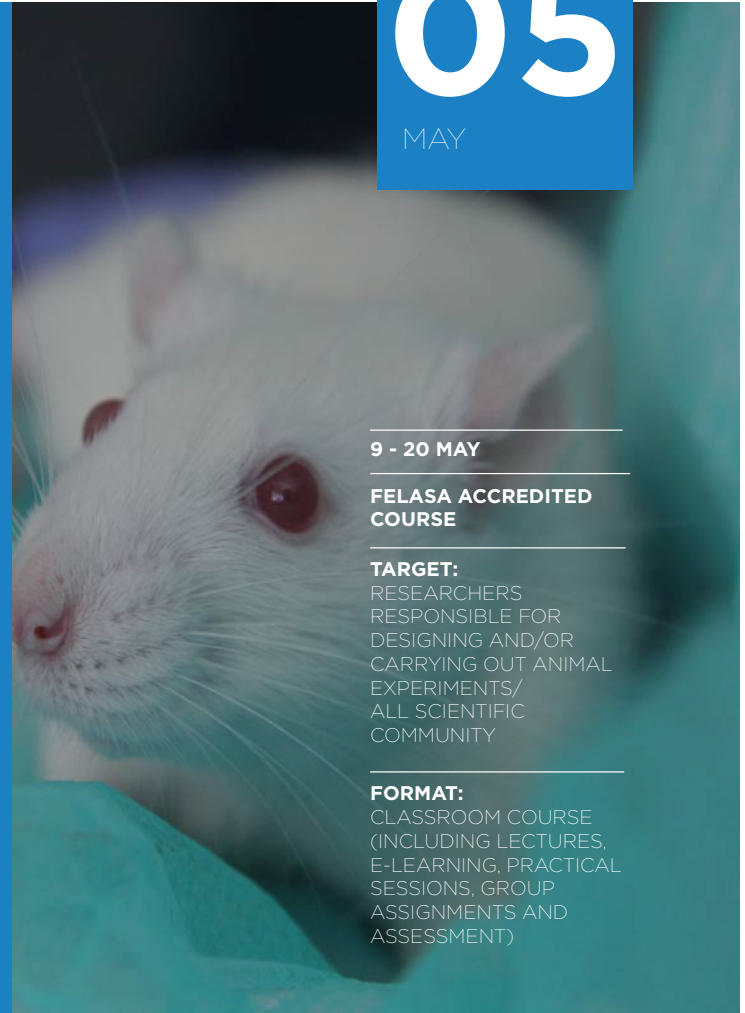
**TARGET:**

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

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**FORMAT:**

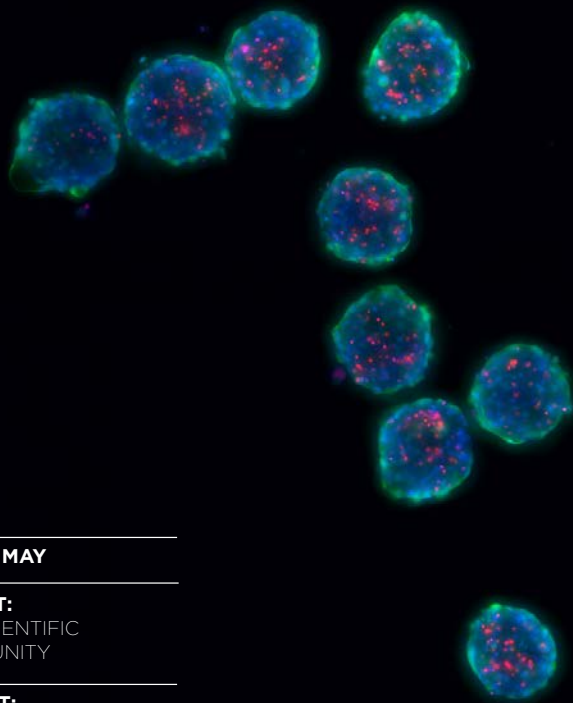
CLASSROOM COURSE  
(INCLUDING LECTURES,  
E-LEARNING, PRACTICAL  
SESSIONS, GROUP  
ASSIGNMENTS AND  
ASSESSMENT)





# 05

MAY



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**23 – 27 MAY**

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**TARGET:**

ALL SCIENTIFIC  
COMMUNITY

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**FORMAT:**

CLASSROOM COURSE

## High Throughput Screening and Image Analysis for BioSciences | 6<sup>th</sup> Ed.

### SCREENING & BIOIMAGE ANALYSIS

Fundamentally practical, this course aims to introduce the participants in experimental design, image acquisition, and image and data analysis for high throughput (HT) experiments.

Lectures will be given by specialists in the field and participants will learn how to use state of the art technology for HT experimentation and open-source software for image and data analysis. The course includes lectures and theoretical-practical classes plus Lab-Sessions where the attendants will get acquainted with the use of automated liquid handling equipment, plate readers and high content (HC) imagers. Interaction with HTS/HCS specialists will be fostered due to the restricted amount of participants.



# 06

JUNE

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**JUNE - SEPTEMBER**

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**TARGET:**

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

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**FORMAT:**

BLENDED LEARNING, INCLUDING PRACTICAL CLASSES AND TUTOR-LED TRAINING

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

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**i3S MEMBERS ONLY**

## Introductory Training Laboratory Animal Science

33<sup>rd</sup> Ed.

Species Specific: Mice and Rats or Zebrafish or Seabass

### LABORATORY ANIMAL SCIENCE

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

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.

# Research Project Management

| 2<sup>nd</sup> Ed.

## TRANSFERABLE SKILLS

Project management is an important skill for a leader and a researcher. After been successful in attracting funding for a project, you will now have to lead it, from set-up to completion. This course will provide an introduction to project management and equip participants with basic skills in managing research projects: From research question to project description; Scheduling: milestones, tasks, and charts; Time management: managing yourself and the work; Team management: the right person for the right job; Risks: identification and management; Financial issues; Project communication, dissemination and exploitation.

# 06

JUNE

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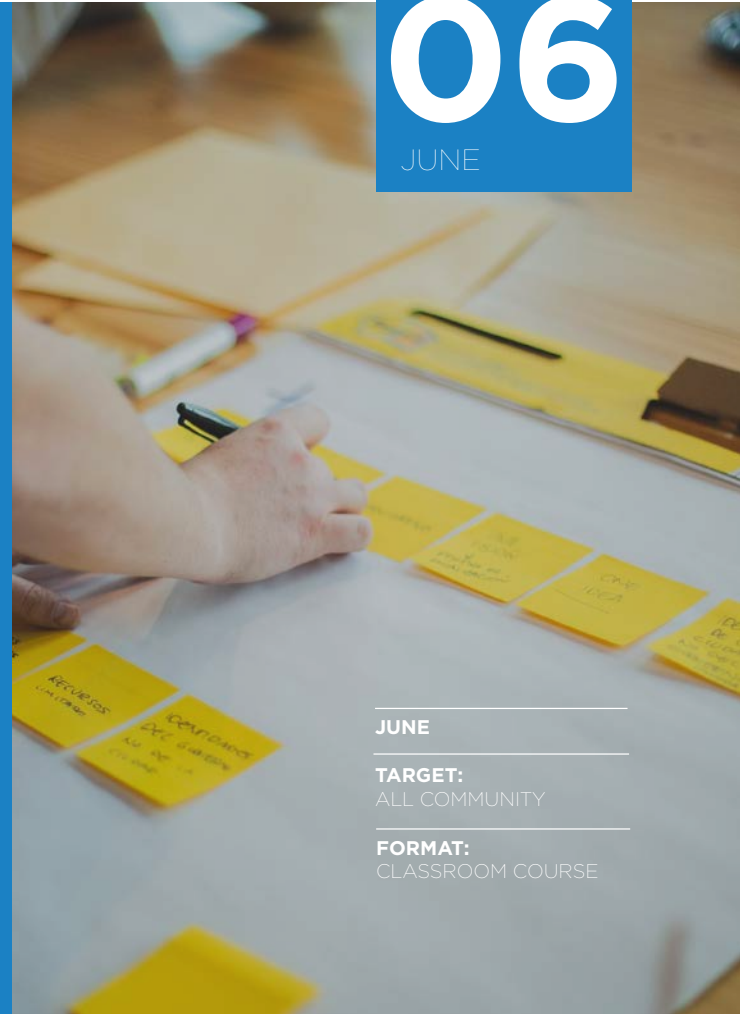
**JUNE**

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**TARGET:**  
ALL COMMUNITY

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**FORMAT:**  
CLASSROOM COURSE



# 09

SEPTEMBER

5 - 16 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)

# Advanced Laboratory Animal Science Course | 33<sup>rd</sup> Ed.

## LABORATORY ANIMAL SCIENCE

Appropriate training in animal biology, experimental techniques, and other relevant topics are a prerequisite for responsible conduct with animals in research. In Europe, the standard for such training is set by FELASA (Federation for European Laboratory Animal Science Associations). 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, and in 2018 with the renewal, training is now 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.

# Organoids and Advanced 3D *in Vitro* Models - REMODEL Summer School | 1<sup>st</sup> Ed.

## BIOENGINEERING AND ORGANOIDS

REMODEL Summer School is organized by the REMODEL consortium. Its aim is to present state-of-the-art science around organoid model systems, how to establish organoids, how to adapt the model system by genetic engineering, how to incorporate organoids in more extensive model systems. This Summer School will combine lectures by world-wide renowned scientists and hand-on sessions, covering advanced *in vitro* techniques and organoids models.

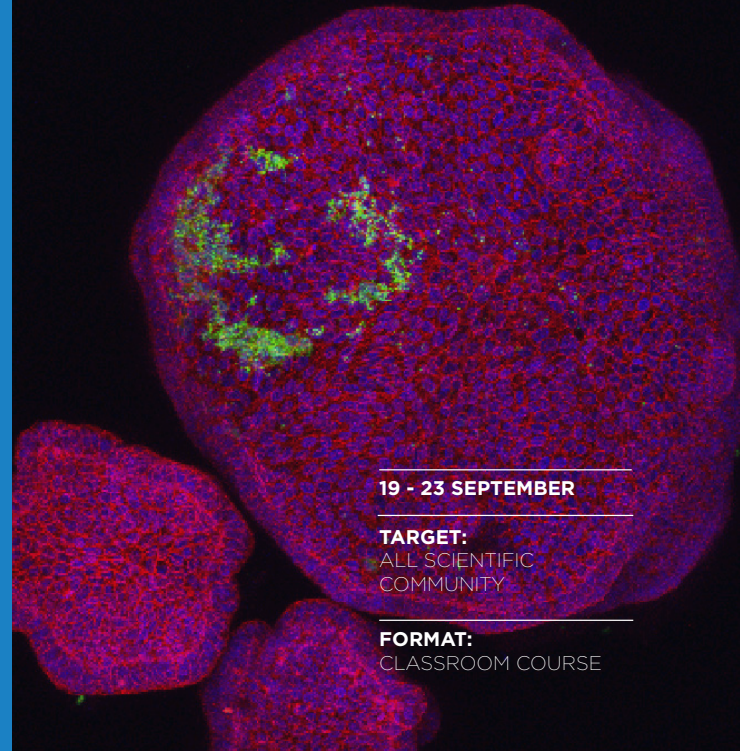
# 09

SEPTEMBER

**19 - 23 SEPTEMBER**

**TARGET:**  
ALL SCIENTIFIC  
COMMUNITY

**FORMAT:**  
CLASSROOM COURSE



A background image showing a fluorescence microscopy view of cells, likely cancer cells, stained with a red fluorescent dye. The cells are irregular in shape and show internal structures like nuclei and cytoplasm. The overall color palette is dominated by deep reds and oranges against a dark background.

# 09

SEPTEMBER

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**26 - 29 SEPTEMBER**

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**TARGET:**

ALL SCIENTIFIC  
COMMUNITY

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**FORMAT:**

CLASSROOM COURSE

## Workshop on Cancer Research Biology: Biological & Molecular Basis | 11<sup>th</sup> 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.

# Introduction to Digital BioImage Analysis

4<sup>th</sup> Ed.

## BIOIMAGE ANALYSIS

With the advent of the digital era, nowadays images are multidimensional numerical data that can be processed and analyzed quantitatively to extract more information. With this course, we intend to give a general introduction to ImageJ/Fiji (imagej.net/), show how to use it to extract quantitative data. Also, the design of typical workflows to automate image analysis will be addressed. Additionally, extra advanced topics will be available with scripting with macro language and image analysis with deep learning tools. This course will be focused on the analysis of light microscopy images but is targeted to all people engaged in research.

## ONLINE COURSE

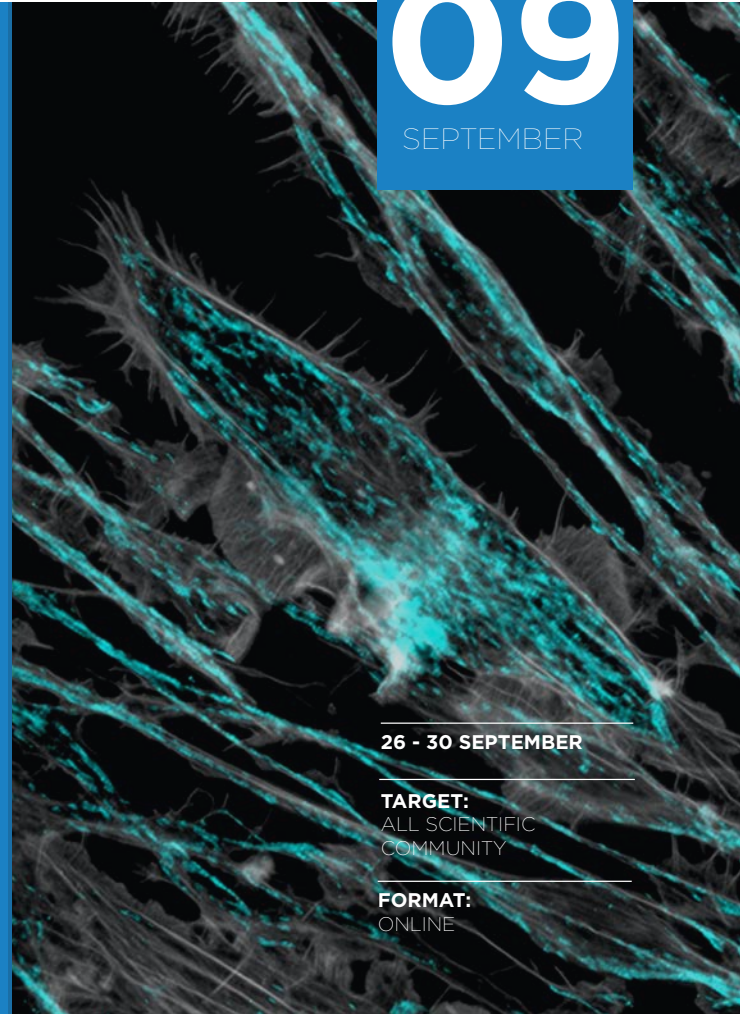
09

SEPTEMBER

26 - 30 SEPTEMBER

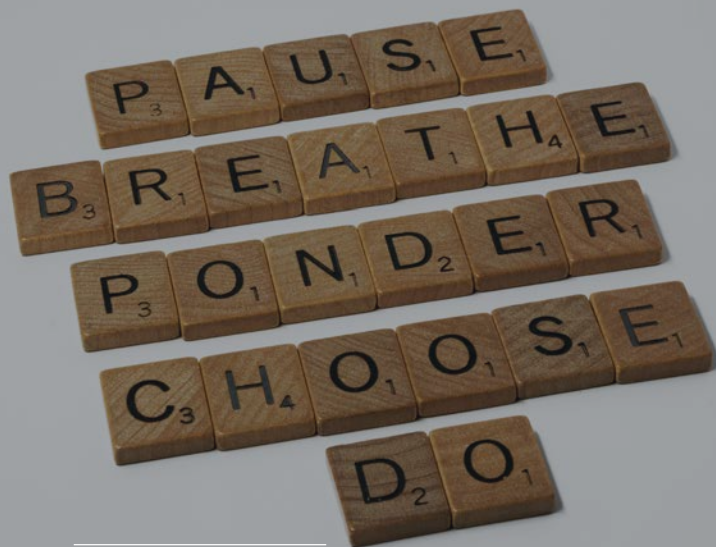
**TARGET:**  
ALL SCIENTIFIC  
COMMUNITY

**FORMAT:**  
ONLINE



# 10

OCTOBER



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**OCTOBER**

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**TARGET:**

ALL COMMUNITY

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**FORMAT:**

CLASSROOM COURSE

## I have a PhD! What's next? | 2<sup>nd</sup> Ed.

### TRANSFERABLE SKILLS

Are you finishing your PhD and you are not sure what to do next? Do you want to do a postdoc but you are not sure what is your best option? Do you have enough information about potential careers inside and beyond academia? Are there professional opportunities for PhDs outside the academic world? How is that job market? How to network efficiently? What do I need to prepare a successful job application? How can I get the most of a postdoc focus on my future career plans? If you are in the last year of your PhD and you have one or more of these questions, please join the workshop "I have a PhD! What's next?" to get some hints on how to navigate your options, make informed decisions and prepare the transition from your PhD to postdoc or jobs outside academia; whatever you decide. The workshop will combine individual, teamwork and practical exercises; acquiring tools that will help you to open your mind to the new professional challenges.

# Introductory Training Laboratory Animal Science

34<sup>th</sup> Ed.

Species Specific: Mice and  
Rats or Zebrafish or Seabass

## LABORATORY ANIMAL SCIENCE

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

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.

# 10

OCTOBER

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### OCTOBER - DECEMBER

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#### TARGET:

I3S MEMBERS THAT  
WILL CARRY OUT  
EXPERIMENTAL AND  
OTHER SCIENTIFIC  
PROCEDURES ON LIVING  
ANIMALS

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#### FORMAT:

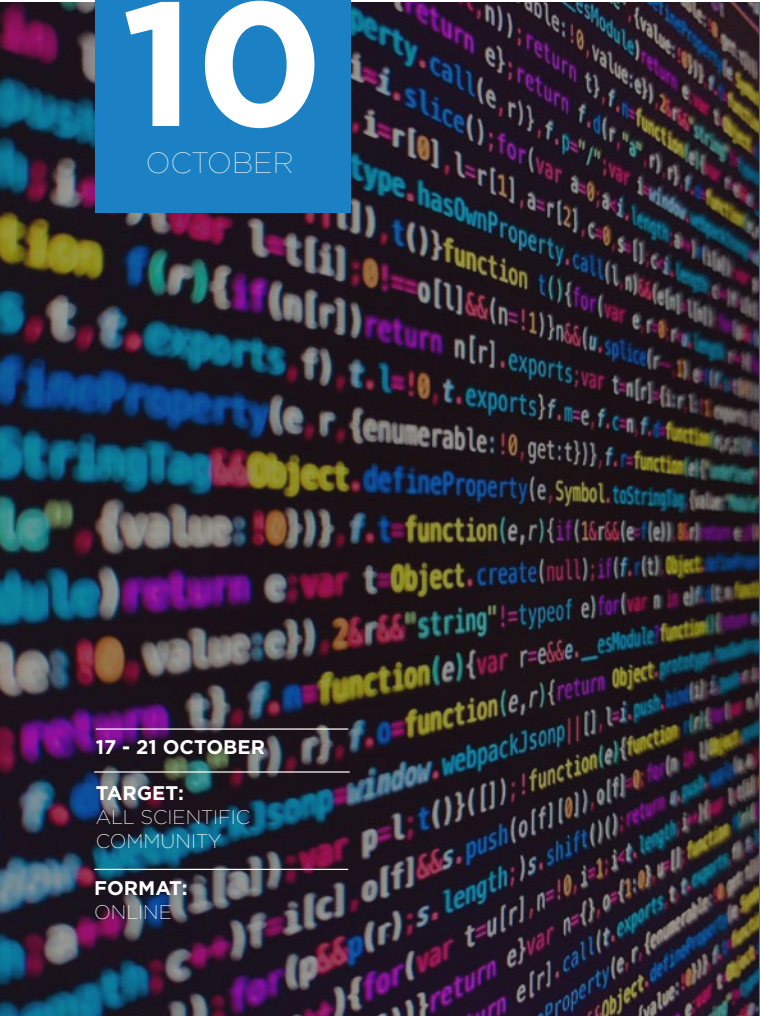
BLENDED LEARNING,  
INCLUDING PRACTICAL  
CLASSES AND TUTOR-  
LED TRAINING

I3S provides Laboratory  
Animal Science training  
solutions for research  
institutions and animal  
facilities. To know more  
please contact us!

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**I3S MEMBERS ONLY**





# 10

OCTOBER

17 - 21 OCTOBER

**TARGET:**  
ALL SCIENTIFIC  
COMMUNITY

**FORMAT:**  
ONLINE

# Introduction to Python and Machine Learning for the Biosciences

| 4<sup>th</sup> Ed

SCIENTIFIC PROGRAMMING  
AND DATA ANALYSIS

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

# 11

NOVEMBER

# Intellectual Property Management | 2<sup>nd</sup> Ed.

## TRANSFERABLE SKILLS

According to the World Intellectual Property Organization (WIPO), intellectual property: *“...refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names, and images used in commerce”*. The objective of the workshop is to promote awareness of intellectual property, as one of the important assets of the research. Participants will acquire a better understanding on how to deal with the outputs of their research, and how to ascertain that they are protecting their data, providing the basis for the commercialization step.



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**NOVEMBER**

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**TARGET:**  
ALL COMMUNITY

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**FORMAT:**  
CLASSROOM COURSE



# 11

NOVEMBER

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**28 - 30 NOVEMBER**

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**TARGET:**

RESEARCHERS  
WHO WANT TO GO  
BEYOND THE BASICS  
AND PROGRESS TO  
MORE INTERMEDIATE/  
ADVANCED ANALYSIS  
WITH IMAGEJ/FIJI

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**FORMAT:**

CLASSROOM COURSE

## Batch analysis and macro development in ImageJ/Fiji: going beyond the basics

| 4<sup>th</sup> Ed

### BIOIMAGE ANALYSIS

This course is designed for ImageJ/Fiji users who want to go beyond the basics and progress to more intermediate/advanced analysis with this software. The course will focus on how to automate routine tasks (for conditions where many images need to be processed), as well as how to deal with more complex image analysis situations, to maximize information extraction.

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

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ADVANCED-TRAINING**

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