SCUOLA NORMALE SUPERIORE

Transversal activities 2025-2026 for PhD students

THE RESEARCH LIFECYCLE: From FAIR Data to Impact

Registration form

The course offers a renewed training programme that embraces the entire research lifecycle.
It is structured into **four modules of 6 hours each**, designed to guide participants through a progressive learning path:

- **Module 1** (8 June): **Open Access, Open Science, and Social Impact**
- **Module 2** (9-12 June): **Research Data Management: The FAIR Principles and the Practice of Data Sharing**
- **Module 3** (18 June): **Protection and Valorization: Intellectual Property**
- **Module 4** (26 June): **From Research to Impact: Tools and Perspectives.**

phd-transversal-activities@sns.it

EELISA European University

MODULE 1: Open Access, Open Science and Social Impact

Session 1: The Ecosystem of Open Science and Responsible Research

IN PERSON

ON-LINE

June 8, 9-10 a.m. | Palazzo della Carovana | Sala Azzurra and ONLINE (for all students)

Generating Value through Research

RICCARDO PIETRABISSA | IUSS Pavia

Societal progress is largely due to the advancement of knowledge. Research and researchers contribute to the understanding of natural phenomena and human thought, and they have a duty to collaborate with society so that new knowledge can be applied.

The impact of knowledge is difficult to define and measure, but it is the true mission of research. Strategy, mission, objectives, and tools to actively contribute to societal progress are the new identifying features of a modern university.

IN PERSON

ON-LINE

June 8, 10-11 a.m. | Palazzo della Carovana | Sala Azzurra and ONLINE (for all students)

Why Open Science is a Strategic Priority

FRANCESCO RAIMONDI | Scuola Normale Superiore

Open Science is a key paradigm in modern research, promoting transparency, accessibility, and collaboration through the sharing of data, methods, and results. Strongly supported by European policies such as Horizon Europe - which mandates open access to publications and encourages data sharing according to the principle "as open as possible, as closed as necessary," as well as the adoption of FAIR data principles - it has also been integrated into institutional frameworks, including the internal regulations of the Scuola Normale Superiore. The lecture will focus on explaining why open science is fundamental for research, highlighting its role in enhancing research quality, accelerating innovation, and strengthening public trust, by presenting some real-world examples.

Session 2: Open Access Publishing: Understanding Copyright and Licenses

IN PERSON

ON-LINE

June 8, 11.30 a.m.-1 p.m. Palazzo della Carovana | Sala Azzurra and ONLINE (for all students)

Open Science: History, Developments and EU Regulatory Developments

CATERINA SGANGA | Scuola Superiore Sant'Anna

After a brief definition of the Open Science movement and an overview of its historical development at an international and EU level, this lecture will move to an analysis of how Open Science has been implemented into the most recent EU research framework programmes and in the European Research Area (ERA) policy agenda. This will include a detailed overview of researchers' and institutions' Open Science obligations when carrying out an EU-funded project, at all stages of the research lifecycle.

IN PERSON

ON-LINE

June 8, 2-3.30 p.m. Palazzo della Carovana | Sala Azzurra and ONLINE (for all students)

Open Access Pathways and Their Relationship with Copyright, Patents/Trade Secret and Data Law

CATERINA SGANGA | Scuola Superiore Sant'Anna

This session will focus on scientific publishing, authors' and publishers' copyright and the Open Access paradigm. Topics will include (a) an overview of the most common "roads" to Open Access; (b) the interplay between copyright, patents/trade secrets, data law and Open Access policies; (c) alternatives to copyright: Creative Commons et al.; (d) rebalancing the contractual interaction between authors and publishers: towards an EU-wide secondary publication right?

IN PERSON

ON-LINE

June 8, 4-5 p.m. Palazzo della Carovana | Sala Azzurra and ONLINE (for all students)

Tools and Repositories: IRIS SNS and Zenodo

DONATELLA TAMAGNO | Scuola Normale Superiore

This session is dedicated to presenting the main types of repositories for publications and data, with a focus on the key features of the SNS Institutional repository IRIS and the SNS Zenodo community for datasets.

MODULE 2: Research Data Management: The FAIR Principles and the Practice of Data Sharing

Session 1: From Collection to Preservation: Useful Tools for Research Data Management (each student must choose one lesson; the others ones are optional)

June 9, 9.30-12.30 a.m. | ONLINE

(recommended for students of the Faculty of Science and, on a voluntary basis, to EELISA students)

Doing Good Through(out) Research: Ethics, Privacy and FAIR Principles

ELENA PAVAN | Università degli studi di Trento

ON-LINE

The seminar unfolds in three consecutive parts. First, the topic of privacy will be discussed, with particular attention to defining what is meant by personal data and special categories of personal data. Special focus will be given to the relevant legal obligations, and participants will collectively discuss some measures to protect the privacy of individuals involved in research.

Next, the seminar will address the topic of ethical research, and in particular the tension that may arise between completing research tasks and adhering to the principle of "do no harm".

Finally, the FAIR data framework will be introduced, outlining its main features and relating it to issues of privacy and ethics. The discussion will take the form of an open and interactive space for exchange, where the topics of privacy, ethics, and FAIR data will be explored in relation to the research needs of the participants.

June 9, 2.30-5.30 p.m. | Palazzo della Carovana, Aula Bianchi Lettere and ONLINE

(recommended for students of the Faculty of Humanities and, on a voluntary basis, to EELISA students)

Zotero: Reference Managing in an Open Science Perspective

GIOVANNI TONOLO | Università degli studi di Firenze

IN PERSON

ON-LINE

This module provides an introduction to a useful and, in some disciplines, necessary digital tool for PhD students: reference management software. One such tool, Zotero, will be introduced, and its use for storing, organising, and annotating citations and other documentary resources will be demonstrated.

The lesson is divided into three parts: first, an overview of how Zotero works and how it can instantly create references and bibliographies for any text editor, including direct integration with Word, LibreOffice, LaTeX, and Google Docs. This is followed by a discussion of the methodological challenges involved in building a personal bibliography during the thesis process. Finally, the role of Zotero in the research data management lifecycle from an open science perspective is examined. In particular, attention is given to how it enables the conception of a bibliography as a set of metadata and data that can be made findable, accessible, interoperable, and reusable, and that supports more effective collaboration with colleagues.

June 10, 10.30 a.m.-1.30 p.m. | Palazzo della Carovana, Aula Bianchi Lettere and ONLINE

(recommended for students of the Faculty of Science and, on a voluntary basis, to EELISA students)

Supporting Open Research and FAIR Principles with MATLAB

ALESSIO CONTE | Mathworks, **EMMA LAZZERI** | CNR

IN PERSON

ON-LINE

In this module, participants will explore MATLAB features that support the academic research workflow, with a specific focus on how MATLAB enables open and FAIR-aligned research practices across data management, development, collaboration, and dissemination of research outcomes. The session will showcase tools and capabilities to:

- create well-documented code using MATLAB Live Notebooks;
- efficiently access and manage open data;
- interoperability with other programming environments, with a focus on integration with Python libraries;
- techniques to share MATLAB apps and programs within the research community.

June 11, 10 a.m.-1 p.m. | Palazzo della Carovana, Sala degli Stemmi and ONLINE

(recommended for students of the Faculty of Science and, on a voluntary basis, to EELISA students)

Beyond FAIR Data: Making Research Software a First-Class Research Output

ROBERTO DI COSMO | INRIA/University Paris Cité

IN PERSON

ON-LINE

Software is now a core instrument of research across all disciplines: it encodes methods, transforms data, controls instruments, and often constitutes the most precise "executable description" of what was actually done. Yet research practice still treats code as secondary-linked via unstable URLs, shared as versionless

snapshots, or cited in ways that prevent verification, reuse, and proper credit. This gap undermines reproducibility, transparency, and accountability, and increasingly clashes with emerging expectations from publishers, funders, and regulators.

Following the call to action in the recent Nature commentary "Stop treating code like an afterthought: record, share and value it" (https://www.nature.com/articles/d41586-025-03196-0), this course provides a pragmatic, end-to-end workflow for research software: archive it with its full development history, reference it precisely at the right granularity, describe it with
machine-readable metadata, and cite/credit it in ways that work for science–and for evaluation processes such as Artifact Evaluation Committees (AEC).
Software Heritage will be used as the backbone: it is the universal archive of publicly available source code, providing intrinsic, cryptographically strong identifiers (SWHIDs) for software artifacts (from full snapshots down to code fragments), and is increasingly integrated with scholarly repositories and citation tools. Participants will leave with concrete best practices, checklists, and examples ready to apply in their own research and community roles.

June 11, 2.30-5.30 p.m. | Palazzo della Carovana | ONLINE

(recommended for students of the Faculty of Science and, on a voluntary basis, to EELISA students)

Research Computing Fundamentals for Neurobiology: Tools and Methods for Reproducible Science

LEONARDO LUPORI | FMI

This workshop aims to establish foundational skills in data management, code versioning and research documentation that support open science principles and enhance research reproducibility.

- Digital image analysis: Fundamentals of scientific images (bit depth, resolution, file formats), programmatic approaches with MATLAB/Python, specialized software for histological analysis and best practices for publishing and sharing imaging data.
- Version control: Introduction to Git and GitHub with practical workflows designed for biological research, focusing on tracking analysis code changes and facilitating collaboration.
- Laboratory documentation: Methods for comprehensive digital note-taking in research settings, including essential documentation practices and tools for maintaining organized research records.

Session 2: Why a Data Management Plan (DMP) is essential. Workshop on preparing a DMP

June 12, 9-11 a.m. | Palazzo della Carovana, Sala degli Stemmi (for all students)

June 12, 11.30 a.m.-1.30 p.m. | ONLINE (for all students)

LIISE LEHTSALU | Research Data Alliance Europe

A Data Management Plan (DMP) is a document that outlines how research data are handled, stored, secured, and shared in a research project. In this hands-on workshop, the role of DMPs in research projects and the information that must be included in an effective DMP will be considered.
The participants will also start drafting a data management plan for their research project.

Session 3: Principles of Research Security and Integrity

June 12, 2.30-3.30 p.m. | ONLINE (for all students)

FABRIZIO BARBERIS | Università degli studi di Genova

Research security is nowadays a fundamental aspect of any research project. Attention should be paid from the very beginning to potential risks related to the unauthorized export of sensitive data, materials, and results. Such incidents may cause damage both to national economic interests and to the reputation of research institutions or academia. Criminal law consequences for researchers may also significantly affect their careers. This overview will present the basic principles of research security to participants.

MODULE 3: Protection and Valorization: Intellectual Property

Session 1: Introduction to Intellectual Property (IP) and Collaborative Research

IN PERSON

ON-LINE

June 18, 9 a.m.-1 p.m. | Palazzo della Carovana, Sala Stemmi and ONLINE (for all students)

MASSIMILIANO GRANIERI | Università degli studi di Brescia

This lecture provides an overview of the main intellectual property (IP) protection rights relevant to research and knowledge production in the scientific, humanities, and social science domains. It introduces the fundamental mechanisms through which intellectual creations can be protected and managed, including patents, copyright, software protection, trade secrets and trademarks, highlighting their scope, requirements, and typical fields of application.

The lecture also addresses the role of public research in generating knowledge for societal progress. It discusses why the transfer of knowledge from universities and research institutions to society and the economy is essential, and how this process is practically implemented through mechanisms such as licensing agreements, research contracts, and other knowledge transfer arrangements. By combining an introduction to IP protection with an overview of knowledge transfer practices, the lecture aims to provide participants with a clear understanding of how research results can be protected, managed, and responsibly shared to maximize their impact on society.

Session 2: The SNS Research for Society and Impact: Examples of Collaborations

(each student must choose one lesson according to their Faculty)

IN PERSON

ON-LINE

18 June, 2.30-4.30 p.m. | Aula Bianchi Scienze and ONLINE

(recommended for students of the Faculty of Science and, on a voluntary basis, to EELISA students)

From Photons to Market: A Case-Study Journey in Knowledge Transfer and Cross-Sector Innovation -

FRANCESCO CARDARELLI | Scuola Normale Superiore

This session explores the transition of advanced fluorescence lifetime imaging (FLIM) from a specialized laboratory tool to a versatile solution for industrial and clinical applications. Using patented technology as a primary case study, the complete lifecycle of research-driven innovation will be examined: from initial discoveries in a laboratory setting to intellectual property protection and commercialization through dedicated technology startups and strategic innovation studios.

The talk will detail how academic research scales into real-world impact through high-level industrial contracts in the pharmaceutical sector for drug screening and upcoming large-scale funding initiatives aimed at expanding the number of drug targets.

Furthermore, the "horizontal" scalability of this technique into diverse fields – including agri – food (smart fertilizers), cosmetics, functional surfaces, and cultural heritage – will be discussed. This case study provides a practical roadmap for PhD students to understand how intersectoral collaborations and strategic IP management can amplify the reach and societal impact of scientific research.

IN PERSON

ON-LINE

18 June, 2.30-4.30 p.m. | Palazzo della Carovana, Aula Bianchi Lettere and ONLINE

(recommended for students of the Faculty of Humanities and, on a voluntary basis, to EELISA students)

From Humanities to Humans: Case Studies from the Classe di Lettere in Knowledge Transfer and Social Impact

FLAVIO FERGONZI | Scuola Normale Superiore

This session examines the transition of art-historical and literary research from the academic sphere to the development of high-impact digital solutions for the cultural and museum sectors. Through the Maconda portal and the strategic collaboration between the Scuola Normale Superiore and the Centro Pecci in Prato, presented as primary case studies, it will illustrate how knowledge transfer can transform archival materials into dynamic tools for public storytelling and critical analysis.

IN PERSON

ON-LINE

18 June, 2.30-4.30 p.m. | Palazzo Vegni, Aula Magna (Firenze) and ONLINE

(recommended for students of the Faculty of Political and Social Sciences and, on a voluntary basis, to EELISA students)

Communicating social sciences: a tool for social innovation and policy-making

MARTINO MAZZONIS DI PRALAFERA | Scuola Normale Superiore, **MARGHERITA MUGNAI** | Socialab

The social sciences provide tools to investigate and understand contemporary society and potentially innovate and change it for the better. Communicating research results to a wider audience and policymakers helps inform the national and international debate, while using the knowledge acquired through the study of social phenomena can help both improve informed participation in decision-making and policy design. The objective of the two-hour workshop is to propose tools and experiences on how to do this.

MODULE 4: From Research to Impact: Tools and Perspectives

Session 1: Funding Schemes and Impact-Oriented Project Design

IN PERSON

ON-LINE

June 26, 9 a.m.-12 p.m. | Palazzo della Carovana, Aula Bianchi Scienze and ONLINE (for all students)

ANTONIO CARBONE | Day One srl

In recent years, the concept of impact has become a central element in research funding policies, particularly within European programmes such as Horizon Europe. This session will introduce the main funding schemes and instruments aimed at supporting the valorisation of research results and their translation into tangible benefits for society. It will also present the concept of impact pathways, describing how scientific outputs can lead to meaningful changes over the medium and long term.

Special attention will be given to the different dimensions of impact - scientific, social, and economic - and to how these are integrated into the design of competitive research proposals. Drawing on examples and practices from European funding programmes, the session will discuss how to identify relevant stakeholders, define credible expected outcomes, and develop strategies to maximise the impact of research activities.

The aim is to provide participants with conceptual and practical tools to integrate the impact dimension from the early stages of research design, strengthening the link between academic research, innovation, and societal transformation.

Session 2: Academic Entrepreneurship: Opportunities, Objectives and Spin-off Creation

IN PERSON

ON-LINE

June 26, 2-5 p.m. | Palazzo della Carovana, Aula Bianchi Scienze and ONLINE (for all students)

ANDREA PICCALUGA | Scuola Superiore Sant'Anna

This session will present the fundamental steps for setting up spin-off companies. Motivations, opportunities, and obstacles will be discussed interactively, giving participants the opportunity to share insights and ask questions about their specific situations.

INFO

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SNS PhD students enrolled from the 2025/2026 academic year are required to attend all four course modules. They may take one module per year, or choose to attend Modules 1 and 2 together (in either the first or second year) and/or Modules 3 and 4 together (in either the third or fourth year)

SNS PhD students enrolled in academic years prior to 2025/2026 who have not attended the mandatory Open Science course are required to attend Modules 1 and 2

SNS PhD students enrolled in academic years prior to 2025/2026 who have already attended the mandatory Open Science course, as well as EELISA PhD students, may choose to attend all four modules.

Legend

- PISA-BASED STUDENTS
- PISA-BASED STUDENTS ON MOBILITY abroad authorised by SNS
- FIRENZE-BASED STUDENTS
- EELISA STUDENTS

INFO

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