

## COMMUNICATION AND OUTREACH

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The Education and Public Outreach Service (EPOS) of INFN LNF fosters the scientific literacy through a wide program of initiatives addressed to students, teachers and general public to bridge science and society, either inside or outside the LNF site. The main missions are to engage the public with science, to inform about the latest issues in research conducted by INFN-LNF and the collaborations, to enhance the valorization of scientific heritage and to build network with the society. The Service includes many activities: communications (web and social), press and media relations, multimedia, graphics and photos, public events and visits, student and teacher programs. During 2025, the activities have been carried out both online and in person. Many events INFN Kids, INSPYRE, OCRA, and AggiornaMenti are national projects supported by the INFN Third Mission committee INFN - CC3M.

Some activities have been carried out in the framework of Rome Technopole, PNRR project (Missione 4 - Componente 2 Investimento 1.5 Ecosistema dell'Innovazione "Rome Technopole" - ECS00000024) and of NET European Researchers' Night project NET – G.A. 101162609 - co-financed by Marie Skłodowska Curie - Horizon Europe, call European Researchers' Night and Researchers at Schools 2024-2025/ HORIZON-MSCA-2023-CITIZENS-01-01. The EPOS activities have been presented in EPS HEP, INTED, ICERI, ESERA, GIREP-EPEC, SIF leading to 8 publications.

### 1 Student program

EPOS-LNF offers different types of activities to raise awareness, curiosity and passion towards science and its applications to society among young people. In some of these initiatives pupils work together with LNF researchers in laboratory-based activities, having the chance to experience life inside a research centre. These events represent an unique opportunity for High School students that could help in the choice of higher education or career. The activities can be recognized in terms of work-related learning project. In the following, a complete overview of the initiatives targeted to this audience is presented.

#### 1.1 Primary and Middle School: INFN Kids

INFN Kids is a popularization of science project targeted to pupils attending Primary and Middle Schools. The project aims at engaging young people with science through different activities such as hands-on didactic labs, comics, videos, podcasts, animations and tales. During July 2025 the LNF team contributed in the realization of a summer camp "Scienza d'Estate! Summer Camp al museo". The 2025 edition was held both in person for the first time at the Museum of Physics "Museo Poleni" of the University of Padua (ITALY), and through online streaming on the INFN Kids YouTube channel. The in-person edition, with participation from various groups, is structured as a series of weekly workshops focusing on different Physics topics inspired by the various scientific instruments showcased in the Museum. 120 children took part to this activity.

In November, we took part at the Lucca Comics and Game festival - Lucca Junior area, presenting the INFN Kids activities along with science demos and games to explore Physics. More than 3800 people participated to our initiatives. During 2025, we hosted 895 participants to the guided tours and 600 participants to the laboratory-based interactive lectures either at LNF or at schools' premises.

<https://web.infn.it/inf-n-kids/>

## 1.2 The Rome Technopole Citizens Science School

From 3 to 7 February 2025, the Citizen Science School Rome Technopole was held at the INFN National Laboratories in Frascati. The initiative was organized as part of the activities of Spoke 5 of Rome Technopole, in collaboration with the European Citizen Science Association (ECSA), the European Citizen Science Academy, and Citizen Science Italia (CSI). The School was aimed at a mixed group of about 25 participants, including teachers and upper-secondary school students (from the final two years) from Italy and other European countries, university students from European universities, as well as researchers. Throughout the School, participants worked in groups to develop real research projects, engaging directly in all phases of the scientific process: from defining the topic and its context to designing the methodology, from data collection to analysis, and finally to presenting their results.

This was the first time that INFN organized a citizen science school. References [1,3,4]. 20 participants joined the school.



Figure 1: A picture taken during the event.

## 1.3 High School: International Day of Women and Girls in Science

For the International Day of Women and Girls in Science, 11th of February, established by the UN General Assembly to promote STEM careers (Science, Technology, Engineering and Mathematics), LNF organized an event addressed to High School students in their last years. During this event female and male researchers shared with the students their experiences and talked about female scientists and their contributions.

Number of participants: 88.

<https://comedu.lnf.infn.it/international-day-of-women-and-girls-in-science-2025/>

#### 1.4 High School: IPPOG Masterclass

The International Particle Physics Outreach Group Masterclass is a school dedicated to the main issues related to particle accelerators and detectors with a focus on the LHCb experiment and a coding course based on complex systems. As in a real collaboration, students were asked to share the results obtained in the data analysis session during a video conference with other students from Bonn, Geneva, Bari, Ferrara and Birmingham.

The 2025 edition (March, 3-7) hosted 50 students.

<https://comedu.lnf.infn.it/ippog-2025/>

#### 1.5 High School: Researchers @Home

From March to April, a series of 5 webinars devoted to the latest issues of Modern Physics and presented by INFN researchers and professors were held online on the LNF YouTube channel.

La facility di irraggiamento gamma Calliope, Jessica Scifo

Relatività generale: la più bella di tutte le teorie, Danilo Domenici

Scrittura e Memoria: ruolo dei materiali nelle tecnologie passate, presenti e future, Sara Laureti

Meccanica quantistica: le meraviglie della realtà, Vittorio Lubicz

Radionuclidi e radiofarmaci: la fisica nucleare al servizio della medicina, Liliana Mou

400 students subscribed to this event.

The videos are available in the dedicated INFN LNF YouTube playlist while the slides are available on AccendiScienza e-learning platform. Event under the patronage of Rome Technopole and in collaboration with NET European Researchers' Night project.

#### 1.6 High School: INSPYRE International School on modern PhYsics and REsearch

INSPYRE - International School on modern PhYsics and REsearch, *From quantum foundations to artificial intelligence* is a course dedicated to the latest issues of Modern Physics addressed to students in their last two years of High School. The 2025 edition took place in April, 7-11.

Number of registered students: 40 from 7 countries (Italy, Germany, France, Romania, Serbia, Slovakia, Spain). Event under the patronage of Rome Technopole.

In 2025, for the first time ever, the INSPYRE school took place at INFN Legnaro National Laboratory, in July.

Concerning the INSPYRE activities see ref. [2].

<https://comedu.lnf.infn.it/inspyre-2025/>

#### 1.7 Open Day for Primary and Secondary schools

On April 29 and May 13, LNF organized two open days devoted to High School students and Primary and Middle school students respectively. The events included guided tours to the main experimental areas and laboratory-based sessions.

585 students attended these events.

#### 1.8 GENERA

On 29 May, the LNF hosted the final event of the GENERA competition by LNGS, which was attended by 138 participants who also took part in guided tours.



Figure 2: *The participants at the INSPYRE 2025 edition.*

### 1.9 High School: Summer School

The INFN LNF Summer School is open to students who attended their fourth year in High School. The 2025 edition (June 16-20) was structured in lectures, guided tours to the Visitor Centre and the Dafne accelerators, 3 hands-on experimental sessions organized in three didactic paths: particle accelerators, particle detectors and dark matter. 36 students participated to the 2025 course.

<https://comedu.lnf.infn.it/summer-2025/>



Figure 3: *A picture taken during the Summer school.*

## 2 University student

In the framework of the *Corso di Eccellenza* of Sapienza Rome University, LNF organized two different courses addressed respectively to 18 undergraduated and Master's students to deepen the main issues in particle physics, accelerators and related technology. The course was structured in lectures, laboratory-based sessions and guided tours to the main facilities.

<https://comedu.lnf.infn.it/corso-di-eccellenza-laurea-triennale-e-magistrale-in-fisica/>

## 3 Guided Tours

During 2025 several guided tours were organized to the Bruno Touschek Visitor Centre, the Dafne and Sparc accelerators, and to the main facilities. The activity is aimed to present the very sites where research is conducted, to raise awareness towards modern physics and technology, and to make students interacting with researchers (serving as career orientation).

Number of participants: 2437 (2138 High school students, 299 University students).

## 4 Teacher program

This programme consists in three courses addressed to STEM teachers who want to deepen their knowledge in the fields of Physics and Technology.

### 4.1 HOP - Hands On Physics

The Frascati National Laboratory of INFN participate in the HOP project promoted by CERN (European Organization for Nuclear Research), INFN (National Institute for Nuclear Physics), and the Agnelli Foundation, aimed at fostering the teaching of physics in Italian Middle schools, using an innovative and engaging approach.

In 2025, 56 teachers attended HOP in Frascati.

The LNF team also joined the Ferrara edition to support the realization of the event.

### 4.2 AggiornaMenti

AggiornaMenti is a course of Physics addressed to Middle School teachers with a focus on the hands-on methodology. In 2025, two editions of the course were proposed: one structured in 5 lectures on modern physics held between January and February, and another structured over 3 days dedicated to electromagnetism in October. 25 teachers participated to the 2025 editions.

<https://comedu.lnf.infn.it/aggiornamenti-2025/>

### 4.3 Incontri di Fisica - Physics Meetings

This training and refresher course is addressed to Science High School teachers and is dedicated to modern physics, deepening the aspects concerning the leading ongoing research, the development of cutting-edge technology and their impacts in society. In 2025 the edition took place in November 13-15. The course was structured in lectures and one experimental session. Besides the traditional talks related to particle physics and astrophysics, the program included lectures on the latest issues in science. The experimental session lasted two days and is conceived to enhance teaching/learning of modern physics with experiments. Given the large number of participants, different laboratory-based activities were organized in collaboration with researchers of other universities and research centres. In this session, teachers worked together with researchers in the realization of experiments



Figure 4: *A picture of the participants.*

either with high and low tech instruments. These sessions were conducted by researchers from INFN LNF and Roma3.

Event under the patronage of Rome Technopole. The 2025 edition was attended by 114 teachers.

<https://www.lnf.infn.it/edu/incontri/2025/>

## 5 General public

This programme consists of public seminars given by LNF researchers, guided tours to the Bruno Touschek Visitor Centre, Pint of Science, and the NET European Researchers' Night.

[visitorcentre.lnf.infn.it](http://visitorcentre.lnf.infn.it)

### 5.1 European Researchers' Night

The European Researchers' Night is an initiative created in 2005 by the European Union which aims at promoting valuable occasions of meeting between science and society in enjoyable and bracing contexts. In 2025 LNF was partner of the Science Together NET project in collaboration with 12 research centres and universities of the territory. In this framework, the LNF team organized:

- On June 7 and 21, Scientific trekkings (82 participants).
- On September 24 guided tour to the Dafne accelerator, SPARCLab and the Bruno Touschek Visitor Centre (89 participants).

- Main event in person at the Città dell'altra Economia, September 26 -27 with 20000 registered accesses to the area.

Event organized in collaboration with Rome Technopole.



Figure 5: Pictures taken during the NET European Researchers' Night 2025.

## 6 Overview of the public outreach activities in 2025

Guided tours with participants divided into the different target audience

Primary and Sec. schools	University, Higher education	General public	Institutional visits	Total
3023	299	372	97	3791

Participants at Schools, internships, seminars and lab-based lectures

Primary and Sec. schools	Webinars	University and Higher education	Total
1489	400	18	1907

Participants at training course for teachers

AggiornaMenti	Incontri di Fisica	HOP	Total
25	114	56	195

Participants at public events

Pint of Science	ERN NET	Other Science Festival	Total
140	20000	4000	24140

## 6.1 AccendiScienza - e-learning for science education

AccendiScienza is a tool for e-learning and scientific culture diffusion. The platform, financed by MIUR (Ministry of Education, Universities and Research) has been completed thanks to the collaboration with Consorzio GARR and University Marconi. Created to collect and freely make available lessons and seminars held at LNF, this web-portal contains four sections dedicated to its different targets: high school teachers, students, general public, young people. The main goal of the portal is to enhance and give more extensiveness to the activities organized every year by the Laboratory here in Frascati by enabling remote participation too. In addition, it will be a valuable support to traditional scientific teaching and education.

`accendiscienza.lnf.infn.it`

## 7 Communication

The Communication office aims to create and distribute informational contents concerning the ultimate issues related to LNF experiments and collaborations, moreover it enhances the valorization of LNF scientific heritage. The principal communication activities are on the website and on socials.

During 2025, 20 news have been published on LNF website, and hundreds of pieces of content were posted on socials.

LNF was featured in a Focus TV documentary devoted to Enrico Fermi, "La Fisica dopo Fermi".

### 7.1 Web Editorial board

The LNF Web Editorial board role is to improve the development of web content in order to keep the website constantly up to date. The Editorial Board is made of representatives of all the LNF divisions, services and the Director and provides for the collection, editing and publication of the various news, dissemination articles and other texts and communications addressed both to the general public and the LNF personnel.

`cdrweb.lnf.infn.it`

### 7.2 Social media

LNF fosters public engagement with science via social media and is currently active on Facebook, Twitter, Instagram and YouTube.

Facebook @lnf.infn.it [followers 6029]

Instagram @lnf\_infn [followers 6948]

YouTube [youtube.com/user/INFNLNF](https://www.youtube.com/user/INFNLNF) [followers 31400] Number of INFN LNF YouTube views [1 January-31 December 2025]: 183215

## 8 Erice International School of Science Communication and Journalism

In October 11-13 2025, LNF together with INFN Press Office organized the Erice International School of Science Communication and Journalism, a summer school of the Italian Institute of Nuclear Physics held yearly at the Ettore Majorana Foundation and Center for Scientific Culture in the village of Erice, in Sicily. This year theme was "ORIGINS How it all began". Almost 20 science communicators and journalists from all over the world participated at this school.

<https://ericescicomschool.lnf.infn.it>

## 9 Acknowledgements

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## 10 References

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