



# MUSE Outreach Activities

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# Introduction

## MUSE Dissemination and Outreach (WP5) mission

### Outreach

- ▶ promotion of communication between scientific community and general public
- ▶ increase of science awareness

### Dissemination

- ▶ report and publish scientific and technological results in relevant scientific community

The objective of WP5 is to promote communication between the MUSE scientific community and the general public in order to increase science awareness and to inspire the next generation of scientists. This WP also works to ensure the results of the MUSE collaboration are disseminated via participation in professional conferences and publication in professional journals.

# Tasks and Deliverables

## Tasks

**Task 5.1:** MUSE Workshop day (ALL) At the same time as the MUSE annual general meeting, we will organize a one-day workshop. The target of the seminars and lectures given by the MUSE researchers will be university students in physics, engineering and computing science and, possibly, technical high school students at the last year. MUSE laboratories will be open for demonstrations.

**Task 5.2:** MUSE Open day (INFN, HZDR) The MUSE partners already take part in the “European Researchers Night” and “Night of Science”. To coincide with this event, all the MUSE laboratories at INFN and HZDR will be open to the general public to show and discuss the results of our research. We will prepare posters and brief interactive simulations on the computer.

**Task 5.3:** Annual Physics Meeting at LNF (INFN) The target of this three-day event is high school teachers and the goal is to give information on the recent advancements in the field of sub-nuclear and nuclear physics and detector developments. A special effort will be made to prepare experiments which involve the new detector components developed by the MUSE project.

**Task 5.4:** Coordination of UK outreach activities (UCL, LIV) Liverpool and UCL MUSE collaborators organize “masterclasses” for high-school students, with tour of the laboratory facilities and hands-on measurement using prototypes of the g-2 straw trackers, exhibits for the annual Royal Society Show and Big Bang Fair, dedicated work-experience placements for high-school students on detec-

tor development and high-level software.

**Task 5.5:** Summer School at Fermi National Accelerator Laboratory (ALL) The MUSE researchers seconded at FNAL will organize a three-day training on the MUSE research activities for all the students of the FNAL European Master Degree, organized by INFN and the University of Pisa. We will make an effort to give the students the opportunity to meet CAEN and PRISMA researchers and discuss the prospects of working on research and development in European private companies.

**Task 5.6:** Outreach web site (ALL) We will develop a public section of the web site with a detailed description of the MUSE project and with all the information for the general public. This work package foresees one secondment for each year, to coordinate the activities connected to the Summer School at FNAL.

## Deliverables

**D5.1 :** MUSE @ HZDR open day [month 9] MUSE laboratories opened to the general public

**D5.2:** Annual Physics Meetings [month 22] Experiments prepared for the LNF three-day event for high school teachers

**D5.3:** Masterclasses [month 28] Masterclasses for high-school students, with tour of the laboratory facilities and hands-on measurement using prototypes of the g-2 straw trackers

**D5.4:** FNAL Summer School [month 44] Three-day training on the MUSE research activities for all the students of the FNAL European Master Degree

## Completed outreach activities

### MUSE web site online – D7.3, May 2016

- ▶ May 2016, <http://muse.lnf.infn.it/>

### MUSE activities at HZDR open day – D5.1, May 2016

- ▶ May 2016, article about MUSE in in-house HZDR magazine “Insider”
- ▶ 28 May 2016, two posters attended by MUSE at HZDR open day (3400 visitors)
- ▶ 10 June 2016, two posters attended by MUSE collaborators at “Long Night of Science”

### 3-day high school teachers training in LNF – D5.2, Oct 2017

- ▶ October 2016
  - ▶ MUSE members did training on Mu2e R&D hardware
- ▶ October 2017
  - ▶ 1 MUSE member in event organizing committee (200 school teachers involved)
  - ▶ 3 MUSE members did 3 presentations and trainings on MUSE project R&D hardware
  - ▶ 12 teachers involved in MUSE activities, total of 5h lessons and 12h training

## Completed outreach activities

### UK masterclasses – D5.3, Apr 2018

- ▶ UCL,  $g-2$  and Mu2e activities presented in the overview of Physics research

February 15, 2016

March 30, 2017

- ▶ Liverpool: lectures, tour of the clean rooms, demonstration of the straw chambers production process ( $\sim 7$  hours in one day for 80–100 students)

February 24, 2016

June 22, 2016

March 1, 2017

- ▶ report due by April 2018

### UK work-experience placements

- ▶ June-August 2016, 2 students with UCL group on Gm2 tracker, 1 month in Fermilab
- ▶ June 2016, 4 students with Liverpool group, on Gm2 tracker
- ▶ August 2016, 4 students with Liverpool group, on Gm2 tracker

## Completed outreach activities

### training of Fermilab summer students – D5.4, month 44, Aug 2019

- ▶ August 2016, 3h10m of seminars on Gm2  
3 tours of 10 students each to the UK Gm2 Fermilab laboratory
- ▶ August 2017, 3h40m of seminars on Mu2e  
guided tours of 20 students to Gm2 and Mu2e experimental halls
- ▶ report due by August 2019

## Completed outreach activities

### Additional activities

- ▶ September 2016, 2h30m training seminars at MUSE annual meeting in Pisa
- ▶ 15-17 May 2017, MUSE outreach training for Rome University students
  - ▶ 3 seminars on Mu2e experiment and hardware R&D
  - ▶ 2 sessions of hands-on experiences on Mu2e hardware R&D
- ▶ September 2017, 50th Fermilab anniversary open day (10k visitors)
  - ▶ 12 MUSE members and 2 MUSE summer students
  - ▶ Gm2 hall was most popular area with 5k visitors  
MUSE members provided 2 of the 3 major Gm2 exhibits
  - ▶ MUSE Mu2e members did a rich slideshow

## Dissemination

- ▶ I am working to collect all dissemination contributions