



MUSE Outreach & Dissemination status

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MUSE meeting, 13 September 2019

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

Outreach updates since July 2019 MUSE presentation

Deliverable 5.4

- ▶ **completed** 4th cycle of FNAL European summer students training on MUSE research
- ▶ written and submitted report on all 4 training cycles by August 31
 - ▶ (courtesy by Simona Giovannella: **thanks!**)

D5.4 Guided tours, Friday 9 August, 2019

- ▶ visit to the FNAL Muon $g-2$ experiment experiment, guide A. Lusiani
- ▶ visit to the Mu2e experiment, guide Yongyi Wu
- ▶ optional visit to Mu2e tracker atelier, guide Yongyi Wu

D5.4 Lectures, Tuesday 13 August 2019

09:00 - 09:45	C. Polly	Overview of the Muon $g-2$ experiment at FNAL
09:45 - 10:30	B. Casey	The tracker of the Muon $g-2$ experiment at FNAL
10:30 - 10:45	break	
10:45 - 11:30	C. Stoughton	How to kick 200,000 muons per second into a storage ring
11:30 - 12:15	J. Price	How to measure the muon spin precession frequency to 100 ppb

Dissemination updates since December 2018 MUSE presentation

- ▶ talks and papers are reported on the MUSE web site
- ▶ <http://muse.lnf.infn.it/events/category/talks/>
- ▶ <http://muse.lnf.infn.it/paper/>

Presentations since December 2018 MUSE presentation

- S. Miscetti (INFN LNF), Status of the Mu2e experiment, FCCP 2019, August 29-31, 2019
- G. Lukicov (UCL), The Fermilab Muon g-2 straw tracking detectors and the muon EDM measurement, DPF 2019, July 29 - August 2, 2019
- M. Incagli (INFN Pisa), Measuring the muon precession frequency in the E989 Fermilab g-2 experiment, EPS 2019, July 10-17, 2019
- E. Diociaiuti (INFN LNF), $\mu \rightarrow e$ conversion and the Mu2e experiment at Fermilab, EPS 2019, July 10-17, 2019
- E. Diociaiuti (INFN LNF), Production and quality assurance of Mu2e calorimeter CsI crystals (poster), FNAL 2019, June 12-13, 2019
- R. Donghia (INFN LNF), Design and status of the Mu2e crystal calorimeter, NP2019, June 10-11, 2019
- A. Lusiani, Status of the Muon g-2 experiment at Fermilab, PATRAS 2019, Freiburg, June 3-7, 2019
- F. Happacher (INFN LNF), The Mu2e Experiment, WONP 2019, April 1-5, 2019
- S. Mueller (HZDR), Probing charged lepton flavor violation with the Mu2e experiment, DPG 2019, March 17-22, 2019
- R. Donghia (INFN LNF), Design and status of the Mu2e crystal electromagnetic calorimeter, VCI 2019, February 18-22, 2019

Papers since December 2018 MUSE presentation

Muon g-2 Collaboration, Performance of the Muon g2 calorimeter and readout systems measured with test beam data, **accepted by NIM A on August 2019**

A. Driutti for the Muon g-2 Collaboration, Status of the Muon g-2 experiment at Fermilab, SciPost Phys. Proc. 1 (2019) 033, 21 February 2019

A. Driutti et al., The calibration system of the Muon g-2 experiment, NIM A 936 (2019) 98, 31 January 2019

N. Atanov et al., The Mu2e calorimeter: Quality assurance of production crystals and SiPMs, NIM A 936 (2019) 154, 31 January 2019

N. Atanov et al., Mu2e Calorimeter Readout System, NIM A 936 (2019) 333, 31 January 2019