

# 30th International Symposium on Lepton Photon Interactions at High Energies



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## Involving the New Generations in Fermi National Accelerator Laboratory Endeavours

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Since 1984 the Italian groups of the Istituto Nazionale di Fisica Nucleare (INFN), collaborating with the DOE laboratory of Fermilab (US) have been running a two-month summer training program for Italian university students. While in the first year the program involved only four physics students of the University of Pisa, in the following years it was extended to engineering students. This extension was very successful and the engineering students have been since then extremely well accepted by the Fermilab Technical, Scientific Computing and Accelerator Division groups.

Since 2004 the program has been supported in part by DOE in the frame of an exchange agreement with INFN. An additional agreement for sharing support for engineers of the School of Advanced Studies of S. Anna (SSSA) of Pisa was established in 2007 between SSSA and Fermilab. In the frame of this program four SSSA students are supported each year. Over its almost 40 years of history, the program has grown in scope and size and has involved almost 550 Italian students from more than 20 Italian Universities. Since the program does not exclude appropriately selected non-Italian students, a handful of students of European and non-European Universities were also accepted in the years.

Each intern is supervised by a Fermilab Mentor responsible for performing the training program. Training programs spanned from Tevatron, CMS, SBN, Muon (g-2) experimental data analysis, development of particle detectors (silicon trackers, calorimeters, drift chambers, neutrino and dark matter detectors), design, construction and commissioning of the Muon (g-2) Mu2e, SBN and DUNE experiments, design of electronic and accelerator components, development of infrastructures and software for tera-data handling, research on superconductive elements and on accelerating cavities, theory of particle accelerators.

Since 2010, within an extended program supported by the Italian Space Agency and the Italian National Institute of Astrophysics, a total of 30 students in physics, astrophysics and engineering have been hosted for two months in summer at US space science Research Institutes and laboratories.

In 2015 the University of Pisa included these programs within its own educational programs through the Summer School "Summer Students at Fermilab and other US Laboratories". Accordingly, Summer School students are enrolled at the University of Pisa for the duration of the internship and are identified and ensured as such. At the end of the internship the students are required to write summary reports on their achievements. After positive evaluation by a University Examining Board, interns are acknowledged 6 ECTS credits for their Diploma Supplement.

In 2021, to replace the Fermilab program cancelled due to the travelling restrictions, a 3-day Workshop was organized at INFN to keep the connection between the students and Fermilab and inform the students of the most recent developments of Fermilab future endeavours. A cohort of 25 selected students participated in the Workshop.

Information on student recruiting methods, on program organization and training programs of the recent years and on final student's evaluation process at Fermilab and at the University of Pisa will be presented.

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