

Involving the new generations in Fermilab future endeavours

Since 1984 the Italian groups of the Istituto Nazionale di Fisica Nucleare (INFN) and Italian Universities, 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, Accelerator and Scientific Computing Division groups. Over the many years of its existence, this program has proven to be the most effective way to engage new students in Fermilab endeavors. Many students have extended their collaboration with Fermilab with their Master Thesis and PhD.

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 35 years of history, the program has grown in scope and size and has involved more than 500 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, Muon ($g-2$), Mu2e and SBN design and experimental data analysis, development of particle detectors (silicon trackers, calorimeters, drift chambers, neutrino and dark matter detectors), 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. 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.

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

Working group

Diversity, Education and Outreach

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