

# THE ITALIAN SUMMER STUDENTS PROGRAM AT THE FERMI NATIONAL ACCELERATOR LABORATORY

Thursday 30 July 2020 10:10 (20 minutes)

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 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 35 years of history, under the management of the Cultural Association of Italians at Fermilab, 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 who is responsible for performing the program. Training programs spanned from Tevatron, CMS, MicroBooNE, Icarus, SBND, DUNE, Nova experimental data analysis, development of particle detectors (e.g. silicon trackers, calorimeters, drift chambers, neutrino and dark matter detectors), design of the Muon “g-2” and Mu2e 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 CAIF program supported by the Italian Space Agency and the Italian National Institute of Astrophysics, a total of 25 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, which are saved in the Fermilab web pages and in the CAIF archives. After positive evaluation by a University Examining Board, interns are acknowledged 6 ECTS credits for their Diploma Supplement.

The program is now part of the outreach activities of the European Projects MUSE (H2020-MSCA-RISE-2015 GA 690835), NEWS (H2020-MSCA-RISE-2016 GA 734303) and INTENSE (H2020-MSCA-RISE-2018 GA 822185), and is expected to grow further in the near future.

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

## Secondary track (number)

**Authors:** DONATI, Simone (University of Pisa and Istituto Nazionale di Fisica Nucleare); LUONGO, Carmela (INFN - National Institute for Nuclear Physics); BARZI, emanuela (Fermilab); BELLETTINI, Giorgio (Dipartimento di Fisica)

**Presenter:** DONATI, Simone (University of Pisa and Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Education and Outreach

**Track Classification:** 15. Education and Outreach