



Announcement n. 21914

DOE-INFN Summer Students Exchange Program 2020 Edition

The US Department of Energy (DOE) and the Istituto Nazionale di Fisica Nucleare of Italy (INFN) announce the 2020 edition of the Summer Exchange Program dedicated to promote the exchange of students in science between the two countries.

INFN (<http://www.infn.it>) is one of the leading organization worldwide promoting basic scientific research and has tight connections with DOE activities in many areas of interest: Particle Physics, Astroparticle Physics, Nuclear Physics, Theoretical Physics and Detector Physics.

We call for applications of US students willing to join a INFN research team in Italy for a two-month period between June 1st and October 31st, 2020.

There are 11 positions available. Applicants can choose among 19 different INFN sites and 59 research projects.

Grants amount to 5000 € to cover travel and living expenses. They are subjected to a 30% reduction due to Italian income taxes.

Eligible candidates must be enrolled as students at a US university and they must have begun, at the time of application, at least the third year of a US University curriculum in physics, engineering or computing science, or planning to start the third year in 2020.

Applications, in electronic form, must be sent to INFN not later than 27th March, 2020 (11.59 pm CET) through the website: <https://reclutamento.infn.it/ReclutamentoOnline/>

The application should include:

- a short CV following the template provided in the recruitment site, describing the applicant's academic and research experience. Only PDF files will be accepted.
- a list of the University courses and scores. Only PDF files will be accepted.
- the three preferred INFN sites and the research projects chosen among those listed in the Annex I.
- the motivation for applying to this program and a statement on research interests, specifying and justifying the selected projects.

Candidates will be excluded from participation in this call if they submit their application later than the indicated deadline.

Incomplete applications (lack of information or missing files) will not be considered.

Selection of participants will be carried out by the Selection Committee which will establish the evaluation criteria before having seen the applicant's documentation.

The selection of the candidates will be based on:

- the statement on research interests;
- the curriculum vitae and studiorum.

At the end of the selection process, the results of the selection will be published on the INFN website (Job Opportunities – Details of the announcement). Successful candidates will then receive an official communication from the INFN administration Offices.

Selected students are also requested to send their official University transcript by e-mail (digital scanned copy) before accepting the appointment with INFN.

Since September 2010, citizens of countries like US may enter Italy for a period of up to 90 days without a visa, to take part in the exchange program (please check here <http://vistoperitalia.esteri.it/home/en>).

Rome, 25th February 2020

ISTITUTO NAZIONALE DI FISICA NUCLEARE
II PRESIDENTE
(Prof. Antonio Zoccoli)¹

SF/VC/ADV

¹ Documento informatico firmato digitalmente ai sensi della legge 241/90 art. 15 c 2, del testo unico D.P.R. 28 dicembre 2000, n. 445, del D.Lgs. 7 marzo 2005, n. 82, e norme collegate, il quale sostituisce il testo cartaceo e la firma autografa
Direzione Gestione e Finanza

ANNEX 1

INFN Sections and Laboratories	Research Projects
1.Bari	1.Machine learning for the measurement of the cross section for the production of the Higgs boson in vector boson fusion topology
1.Bari	2.Configuration of a HEP analysis workflow in a Jupyter environment with the aid of GooFit and PROOF-Lite tools
2.Bologna	3.Commissioning of silicon detector qualification system The SAND system of the DUNE Near Detector
2.Bologna	4.The SAND system of the DUNE Near Detector
3.Cagliari	5.Studies of Heavy Nuclei collisions at LHCb
3.Cagliari	6.Argon purification with Aria and argon measurement with DART
4.Ferrara	7.Analysis of cosmic ray data from GEM detector readout by TIGER electronics and uTPC algorithm optimization.
4.Ferrara	8.Feasibility studies for the search for Zc(4430) in pi pi psi(2S)
4.Ferrara	9.The Ring Imaging Cherenkov (RICH) detector upgrade project of the LHCb experiment: R&D activities and characterization of fast-timing and radiation-hard single-photon detectors and electronics
5.Genova	10.Pixel detector for the ATLAS Upgrade at HL-LHC
5.Genova	11.Jet physics at the LHC
5.Genova	12.Searching for exotic mesons with CLAS12
5.Genova	13.Light Dark Matter search at Jefferson Lab
6.Lecce	14.Refurbishing of the KLOE calorimeter as Near Detector for the DUNE project
7.LNF	15.TIDE: photon and electron sTIMulated DESorption: Its study and its impact to accelerator vacuum behaviour
7.LNF	16.Desorption processes: analysis through SEY measurements
7.LNF	17.Kaonic atoms measurements with SIDDHARTA-2 to understand the strong interaction with strangeness at threshold
7.LNF	18.Convolutional neural network approach to particles identification in CYGNO experiment
7.LNF	19.Search for dark matter signals at LNF with PADME
7.LNF	20.Nanosensors for biomedical applications
7.LNF	21.Electron beam acceleration for advanced materials characterization
7.LNF	22.Study of b-hadron decays, a tool for New Physics discovery
7.LNF	23.Light dark matter searches with the KLOE-2 detector.
7.LNF	24.Towards testing Quantum Mechanics with neutral kaons at KLOE-2
7.LNF	25.High precision tests of low-energy QCD with fully neutral final states at KLOE-2
7.LNF	26.Data Management & Preservation at KLOE-2
7.LNF	27.Study of the performance of the CLAS12 RICH
7.LNF	28.Low Level RF control and fs laser synchronization
7.LNF	29.Accelerator magnet design
8.LNGS	30.Development of SiPM-based Cryogenic Photodetectors
8.LNGS	31.Detector and target characterization measurements in the framework of LUNA experiment
8.LNGS	32.The XENONnT Dark Matter Experiment
9.LNS	33.Isoscalar and Isovector excitation of the Pygmy dipole resonance in 68Ni
9.LNS	34.Characterization of the response of a miniaturized LAr TPC to low-energy nuclear recoils
9.LNS	35.Construction of the km3net high energy neutrino telescope at 3500 m depth offshore CapoPassero
9.LNS	36.Study of the performance of a Near Detector for the DUNE experiment at FNAL (USA)
9.LNS	37.Understanding nuclear interaction for exotic nuclei and neutron stars
10.Milano	38.Characterization of LGAD sensors for timing measurements at colliders
10.Milano	39.Upgrade and Qualification of the frontend electronics of the FARCOS telescopes
10.Milano	40.Development of a silicon tracking telescope to study particle channeling in bent crystals
11.Napoli	41.Nuclear reactions at Coulomb barrier energies finalized to the research on superheavy elements and exploration of the Terra Incognita
11.Napoli	42.Nuclear reactions at Coulomb barrier energies using the Radioactive Ion beams of the EXOTIC facility (Legnaro National Laboratories of the INFN, Padue)
11.Napoli	43.Measurement of the anomalous magnetic moment of the muon.
11.Napoli	44.Characterization of SiPM based Photon Detection Modules for the DarkSide Prototype.
12.Padova	45.Test of Lepton Flavour Universality with LHCb exploiting multivariate techniques
12.Padova	46.Efficient and fast c-jet identification at the LHCb experiment using quantum-based algorithms
12.Padova	47.Studies on the first events collected in the ICARUS T600 detector at FERMI LAB
13.Pisa	48.Laboratory measurements campaign by using high precision and low noise sensors for future Gravitational Waves detectors.
13.Pisa	49.Machine learning techniques for gravitational wave physics
14.Roma	50.Dark-PMT - Dark Matter Detection with Carbon Nanotubes
15.Roma TorVergata	51.Instrument science for gravitational wave observation
16. Roma Tre	52.R&D on small pad Micromegas
17.Tifpa	53.Feature ranking in deep learning algorithms for HEP experiments
17.Tifpa	54.Characterization of irradiated silicon sensors
17.Tifpa	55.Electrical characterisation of fully depleted Monolithic Active Pixel sensors (MAPS)
18.Torino	56.Development of detectors for beam monitoring applications in particle therapy
19.Trieste	57.Search for short duration transient in Fermi/LAT data
19.Trieste	58.The GAPS experiment for dark matter exploration: development of particle identification algorithms
19.Trieste	59.Measurement of Bs0 → Ds(*)-μ+ν form factors at the LHCb experiment