

# Giacomo Scanavini

PH.D. STUDENT · HIGH ENERGY PHYSICS

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## Education

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### Yale University

PH.D. IN PHYSICS

- Advisor: Ph.D. Bonnie Fleming

*New Haven (CT), USA*

*August 2018 - In Progress*

### Yale University

POSTGRADUATE ASSOCIATE IN PHYSICS

- Advisor: Ph.D. Bonnie Fleming

*New Haven (CT), USA*

*December 2017 - June 2018*

### Univeristà degli Studi di Pisa

MASTER OF SCIENCE (M.S.) IN PHYSICS

- Final Dissertation: First measurement of one pion production in charged current neutrino and anti-neutrino events on Argon
- Advisor: Ph.D. Alessandro Baldini (INFN, Pisa) and Ph.D. Ornella Palamara (Fermilab, USA)

*Pisa, Italy*

*October 2014 - July 2017*

### Univeristà degli Studi di Trento

BACHELOR OF SCIENCE (B.S.) IN PHYSICS

- Final Dissertation: computational analysis of a nucleon-nucleon scattering for S-waves with a central potential model.
- Advisor: Ph.D. Winfried Leidemann (INFN, Trento)

*Trento, Italy*

*September 2011 - September 2014*

## Projects & Publications

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### Deputy Run Coordinator / Run Coordinator (MicroBooNE Experiment)

MANAGEMENT

- Responsible of the data taking operations of the detector, general functioning of the detector and interface between the collaboration and the accelerator facility at Fermilab.

*Batavia (IL), USA*

*January 2020 - July 2020*

### eLEE Analysis with WireCell Team (MicroBooNE Experiment)

DATA ANALYSIS

- Analyst of the signal to background ratio for the  $\nu_e$  charged current events in MicroBooNE with the WireCell framework for the analysis of the Low Energy Excess (LEE).
- Analyst of the neutral current events in MicroBooNE with the WireCell framework for the analysis of the Low Energy Excess (LEE).

*New Haven (CT), USA*

*January 2020 - In Progress*

### Seminar Organizing Committee Member (Yale University)

MANAGEMENT

- Responsible of the organization of the Weak Interaction Discussion Group (WIDG) seminars.

*New Haven (CT), USA*

*January 2020 - In Progress*

### Liquid Argon TPC System (Yale University)

HARDWARE

- Responsible for the installation of the purification system.
- Analyst via simulation of the electric field inside the cryostat.

*New Haven (CT), USA*

*August 2019 - In Progress*

### Field Cage and HV Divider Chain Assembly (SBND Experiment)

HARDWARE

- Responsible for the assembly of the field cage modules.
- Responsible for the testing and construction of the HV divider chain boards.
- Responsible for the integration of the field cage and HV divider chain.

*New Haven (CT), USA*

*February 2018 - In Progress*

## Differential cross section measurements (ArgoNeuT Experiment)

Batavia (IL), USA

DATA ANALYSIS

August 2016 - February 2017

- Main analyst of the two differential cross section measurements for both  $\nu_\mu$  and  $\bar{\nu}_\mu$  induced single charged pion production on argon using data collected by the ArgoNeuT detector at Fermilab.
- Publication: Acciari, R. *et al.*, (ArgoNeuT Collaboration), "First measurement of the cross section for  $\nu_\mu$  and  $\bar{\nu}_\mu$  induced single charged pion production on argon using ArgoNeuT", Physical Review D **98**, 052002 (2018)
- ArgoNeuT Experiment Internal Note: Scanavini G., "Measurement of Neutrino and Antineutrino Charged Current One Pion Production on Argon", Projects-doc-4424-v4, January 2017

## Study on expected event topology in SBND

Fermilab, Batavia (IL)

DATA ANALYSIS

July 2015 - September 2015

- Main analyst of the expected event topology in SBND for events with zero and one charged pion, and  $\nu_e$  elastic scattering based on truth level information and simple kinematic cuts.
- SBND Experiment Internal Note: Scanavini G., "Expectation for neutrino charged-current 0 pion and 1 pion events and neutrino-electron elastic scattering events in SBND", SBN-doc-874-v1, September 2015.

## Teaching

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### Teaching Fellow

New Haven (CT), USA

YALE UNIVERSITY

January 2019 - In Progress

- PHYS 180 - Undergraduate level course of Classical Mechanics (August 2020 - In progress)
- PHYS 181 - Undergraduate level course of Electromagnetism (January 2020 - May 2020)
- PHYS 180 - Undergraduate level course of Classical Mechanics (August 2019 - December 2019)
- PHYS 181 - Undergraduate level course of Electromagnetism (January 2019 - May 2019)

## Outreach

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### Yale Physics Olympics

October 2019, New Haven (CT), USA

### A Night of Magic & Science (A Peabody Family Halloween)

October 2019, New Haven (CT), USA

### Girls Science Investigations (GSI): The World of Sound

November 2019, New Haven (CT), USA

## Skills

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**Programming** C++ (ROOT, LArSoft), python (PyROOT, scikit-learn), Bash, Git, XML

**Software** SolidWorks, COMSOL Multiphysics

**Languages** Italian, English

## Honors & Awards

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### Universities Research Association (URA)

New Haven (CT), USA

RESEARCH AWARD: URA VISITING SCHOLARS PROGRAM

June 2020 - June 2021

- Support the work of faculty and students from the Universities Research Association, Inc. (URA) institutions to work at Fermilab for periods of up to one year.

### Fermilab: Neutrino Physics Center Fellowship

Batavia (IL), USA

STUDENT AWARD: FERMILAB NEUTRINO DIVISION

August 2016 - February 2017

- Envisioned to bring the international neutrino community to Fermilab to engage with the neutrino community at Fermilab, for short to medium term visits.

**Fermilab: Italian Student Program Internships**

*Batavia (IL), USA*

STUDENT AWARD: FERMILAB NEUTRINO DIVISION

*July 2015 - September 2015*

- Highly motivated Italian physics and engineering university students are offered nine-week summer research internships in science, engineering and technology.

**AFS: Study Abroad Scholarships**

*Seattle (WA), USA*

STUDENT AWARD: AFS INTERNATIONAL EXCHANGE DIVISION

*August 2009 - July 2010*

- Full and partial merit-based scholarships for a variety of program destinations. (USA)