



Conéctate con Fermilab

Panel Session: Particle Physics

Panel Chair: Shirley Li

Speakers: Gonzalo Diaz Bautista, Fernanda Psihas, Cristian Pena

October 13, 2022

Gonzalo Díaz

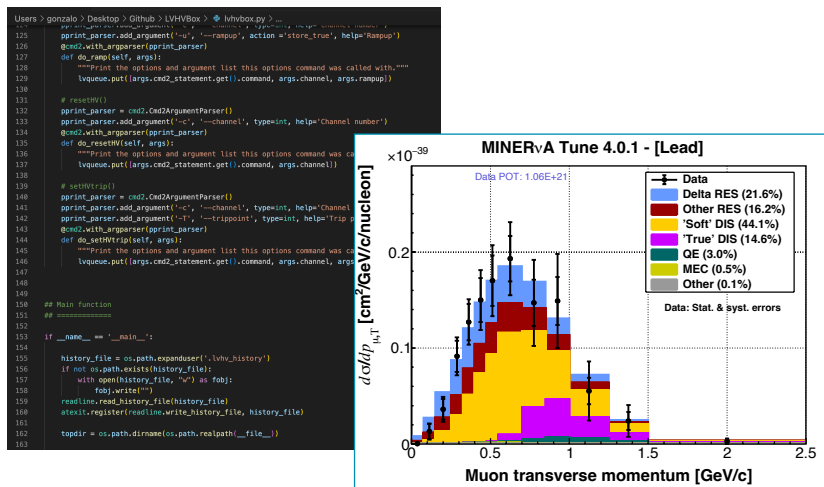
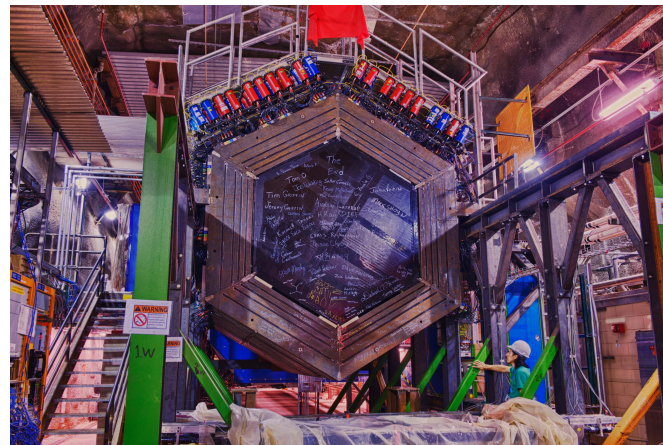
Born and raised in Lima, Perú.

- Undergraduate studies at Pontificia Universidad Católica del Perú (PUCP).
 - Bachelor's degree in Physics.
- Master's degree studies at PUCP in Experimental Particle Physics.
 - Visited Fermilab in a one-year internship in the MINERvA experiment.
 - Thesis: Muon systematic uncertainties.
- Ph.D. in Experimental Particle Physics at University of Rochester.
 - Returned to Fermilab to work on-site at the lab in hardware in software projects for MINERvA.
 - Thesis: Neutrino cross-section measurement.
- Currently: Postdoctoral researcher at Fermilab.
 - Construction and commissioning of the Mu2e experiment's tracker solenoid.



As an experimental physicist, taking care of our detectors is of utmost importance.

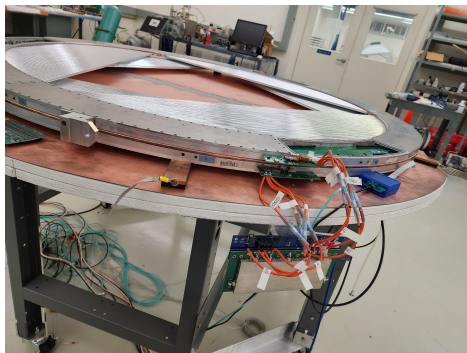
In Fermilab, during my graduate student years, I was able to work in hardware and instrumentation tasks in the MINERvA detector, located in the Underground Hall.



Also, physics analysis are the central goal of a collaborative experiment.

During my years at Fermilab as a Ph.D student, I did a neutrino scattering analysis in MINERvA.

It involves lots of coding, patience, and coffee...
but the results are rewarding!!



Now as a postdoc, I am fully involved into a new adventure in the Mu2e experiment, whose detector is currently in construction.

It is expected to reveal exciting physics results in 3-4 years.

In my personal experience, Fermilab is a great place to develop a career in STEM.

The laboratory not only offers a great professional environment, but also the resources to connect with other people on different activities.

Social clubs, recreational activities, sports clubs, etc.



Fernanda Psihas, Ph.D.

Fermilab

Neutrino Division

Research Associate

DUNE and SBN Experiments

12 years at Fermilab (3 as employee)

 @ferpsihas



My Career Path



I grew up and went to college in Mexico City for mathematics 😊 then engineering physics 🧐

I applied to many graduate schools with no success 😞

Finally I got into graduate school at Duluth, Minnesota 🙄

I did my PhD at Indiana University 🧑

I worked for the University of Texas with a fellowship for Mexican nationals 🇲🇪

I joined Fermilab in October 2019

More about my path as a scientist with ADHD



What I work on

Finding the best tools to answer interesting questions.

Currently I work on two projects:

- **Neutrino experiments:** Using Artificial Intelligence to better understand the particles in our detectors.

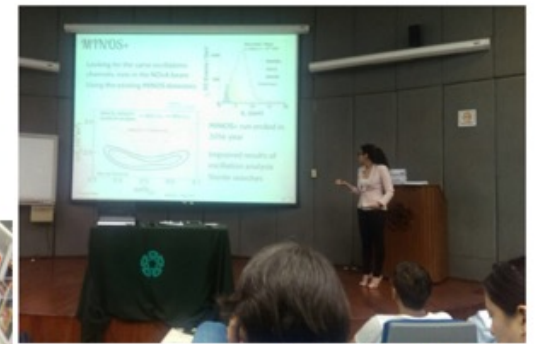
- **Neutrino detectors:** Making prototypes with detector modifications to improve the particle detectors we are building in the next decade.

My job is to do research, learn or create new tools, and communicate my findings to colleagues around the world.



Working on the NOvA detector

Studying detector data



Presenting findings at a conference



Building a prototype for DUNE

Questions???

Please share your experience via link

https://docs.google.com/forms/d/e/1FAIpQLSeK9ep-HMADicLcR-vP_eRws8A4XCSDSDVSUm14bIEQ645Wkw/viewform

Panel Discussion/Questions

- What do you do in your job? Can you explain in one or two sentences? Briefly walk us through a typical day. Do you work alone? In a team?
- What has been the biggest challenge in your career? And how did you overcome the challenges?
- What is or has been the most rewarding?
- What made you choose the field you're in?
- What first got you interested in the field of science and technology?
- What recommendations do you have for students who are pursuing a career in STEM?
- Did you have a mentor throughout your academic and career? How has that helped you?
- Why is it important to get more people, interested in STEM?