Fatima Ariana Rodriguez

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EDUCATION

08/2016 - 05/2021 **The University of California, Berkeley**
Bachelor of Arts Physics; Bachelor of Arts Astrophysics

08/2023 - present **Northern Illinois University**
Masters of Science in Physics

AWARDS & HONORS

2023 **2023 SACNAS NDiSTEM Travel Scholarship**
I was selected among a group of applicants to attend the 2023 National Diversity in STEM (NDiSTEM) conference. I will be presenting my research titled, "Mapping the Radial Component of the Magnetic Field at Muon g-2".

2023 **C2-THE-P2 Program**
I was accepted to work alongside NIU faculty and scientists at Argonne National Laboratory on research and development of computational tools used in particle physics. This funded, two-year program will also allow me to take several courses in computational physics taught by NIU and UIC faculty leading to the completion of an M.S. degree.

2022 **SACNAS CareerCon Attendee**
I was selected among a group of applicants to attend the Society of Advancing Chicanos/Hispanics and Native Americans in Science (SACNAS) CareerCon to gain professional development training and to network with industry sponsors.

2021 **Stanford Physics Identity and Equity (PIE) Program**
I was accepted to virtually attend this program to gain guidance from Stanford faculty and graduate advisors on the Ph.D. application process.

2021 **Special Research Merit Award**, Virtual Statewide CAMP Symposium
I was awarded this top honor in the Physical Sciences and Engineering category by faculty judges for my research titled, "Ultra-Peripheral Collisions vs. Hadronic Collisions: A Comparison of Muon Production."

2021 **Best Video Award**, Virtual Statewide CAMP Symposium
I was given this award by faculty judges for my poster presentation and video; only three out of sixty-eight participants were given this award.

2019 **NSF California Alliance Minority Participation (CAMP) Scholar**
I was selected for this NSF-funded grant among a group of applicants to conduct research for two summers.

RESEARCH EXPERIENCE

10/2022 - 08/2023 **Engineering Physicist I**, Particle Physics Department, Fermilab
Supervisor: Dr. Brendan Kiburg
I worked on obtaining a precision determination of the radial and longitudinal field components of the Muon g-2 experiment. I also updated and debugged the Programmable Logic Controller for the Mu2e experiment.

05/2022 - 08/2022 **GEM Intern**, Particle Physics Department, Fermilab
Advisors: Dr. Brendan Kiburg and Dr. Saskia Charity
I was selected from a group of applicants to intern at Fermilab to study the radial field in Muon g-2 using data analysis in Python. I also re-designed a platform used to mount a Hall probe using Inventor by Autodesk to directly measure the radial and longitudinal field components.

06/2021 - 12/2021 **Staff Research Associate, Student Researcher**, UCB/Astronomy Department
Advisor: Prof. Joshua Bloom
I identified cataclysmic variables (CVs) in TESS data using aperture photometry and studied their time domain properties by creating Lomb-Scargle periodograms in Python.

06/2020 - 02/2020 **Undergraduate Researcher**, UCB/Astronomy Department
Advisor: Dr. Ken Shen
I searched for hypervelocity white dwarf stars from dynamically driven double-degenerate double-detonation scenarios in Gaia-PS1-SDSS Proper Motion Catalog. I also created a Monte-Carlo simulation of the Milky Way Galaxy in Python to determine an expected number of hypervelocity white dwarf stars near Earth.

06/2019 - 08/2019 **Undergraduate Researcher**, Lawrence Berkeley National Laboratory
Advisor: Dr. Spencer Klein
I studied ultra-peripheral and hadronic collisions of heavy ion particles using a Monte-Carlo simulator in C++ and the software ROOT to determine the dominate source of atmospheric muons.

LEADERSHIP

11/2022 - 08/2023 **Communication Coordinator**, Fermilab Hispanic Latino Forum (HLF)
I provided agenda and meeting minutes to HLF membership, and manage printed material. I also helped in the organization of HLF events.

06/2019 - 05/2020 **President**, Hispanic Engineers and Scientists (HES)
I lead 15 board members in organizing all HES sponsored events and represented Latinx students in STEM at campus wide meetings. HES increased by 30% (up to 200 members) during this term.

09/2019 - 08/2020 **Task Force Member**, MPS Undergraduate Diversity, Equity, Inclusion and Advancement Task Force
I was nominated by the physics department to provide input to the Mathematical Physical Sciences (MPS) Divisional Dean and other MPS campus leaders on opportunities for Berkeley to increase diversity and attain equitable outcomes for all undergraduates.

06/2018 - 05/2019 **Treasurer**, Hispanic Engineers and Scientists
I organized fundraisers and assisted in negotiations with company sponsors to best distribute funds to HES members. Fundraising intake increased by 20% during this term.

EMPLOYMENT & TEACHING EXPERIENCE

02/2022 - 05/2022 **Tutor**
Hey Tutor/Azusa Unified School District, Azusa, CA
I provided in-person ELD and math tutoring to students at Paramount Elementary School. I also created and taught curriculum for students who are English-learners.

02/2022 - 09/2022 **Sales Associate & Lead Stylist**
Express, West Covina, CA
I operated cash registers, processed merchandise, and provided in-store customer service. In February, I was selected employee of the month and won a second place award for the Co-Create Associate Regional Competition, which promoted my position to Lead Stylist.

06/2017 - 03/2020 **Planetarium Presenter**
Lawrence Hall of Science, Berkeley, CA
I enthusiastically interpreted astronomical concepts to museum visitors of all ages and operated planetarium equipment during programs.

09/2017 - 03/2020 **Student Library Assistant**
Earth Science and Maps Library, UC Berkeley
I eagerly assisted library visitors on finding library resources and performed accurate data entry along with other circulation functions.

01/2018 - 01/2020 **Multivariable Calculus Instructor**
HES Winter Academic Training (WAT) Camp, UC Berkeley
WAT CAMP is an intensive week-long boot camp organized by HES student leaders to aid underclassmen prepare for their spring semester. I created the multivariable calculus curriculum and successfully taught the material to my undergraduate peers.

PRESENTATIONS

2023 (Jul. 26) Radial Field Mapper Update. Muon g-2 Physics Week. University of Liverpool.

2023 (Apr. 15) Measuring the Radial Component of the Magnetic Field in the Muon g-2 Experiment. APS April Meeting. Minneapolis, Minnesota.

2022 (Dec. 8) Projecting Radial Field Measurements. Muon g-2 Winter Collaboration Meeting. Fermilab.

2022 (Aug. 5 & Aug. 8) Measuring the Radial Field of Muon g-2. SIST/GEM Posters, Final Talks, and Papers Summer 2022. Fermilab.

2021 (Feb. 18) Ultra-Peripheral Collisions vs. Hadronic Collisions: A Comparison of Muon Production. Virtual Statewide CAMP Symposium. University of California, Riverside. Recording of Presentation: https://youtu.be/U3RXQ3f89wI

TECHNICAL SKILLS

Computer Languages: Python, SQL, ADQL, C++, HTML, R
Software & Tools: Latex, Inventor, ROOT