Denise A. Huerta

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**Education**

University of Texas at Arlington Arlington, TX

Bachelor of Science, Physics May 2019

Minor in Mathematics

**Research Experience**

NEXT Experiment Summer 2018-Present

* Collaborate in an international neutrinoless double beta (0vββ) decay search experiment that aims to detect 0vββ decay in a Time Projection Chamber filled with high pressure 136Xe through a novel experimental approach known as Barium Tagging.
* Test the photobleaching properties of preliminary commercial fluorescent dyes to potentially use with Barium tagging.
* Decode data previously collected through a Thorlabs Spectrometer utilizing Python.
* Led small team aimed at creating a membrane that could be vacuum sealed to test the properties of novel barium chemosensors when exposed to Xenon gas in a completely dry phase.
* Utilized SolidWorks to design molds and support systems for the membranes.
* Project lead by Dr. Ben Jones and Dr. David Nygren.

Physics Education Research Spring 2018

* Analyzed data collected in previous semesters in an attempt to create a model to predict student’s performance in a basic physics course.
* Learned how to use Tableau to create visual representations of comparisons between groups of students in order to portray how some differences can affect a student’s overall performance.
* Under the guidance of Dr. Ramon Lopez.

**Teaching Experience**

Physics Clinic Tutor Fall 2017-Present

* Mentor students in general physics classes understand concepts in classical mechanics and electrodynamics as well as work through problems during group study sessions and one-on-one.
* Assist students by explaining topics in astronomy, optics, environmental sciences, and acoustics.

Sunday School Teacher Fall 2013-present

* Guide and teach students at a local parish through their Faith Formation classes.

Student Teaching Internship Spring 2018

* Participated in the UTeach Arlington program aimed to prepare science and mathematics students teach at a secondary level.
* Created and taught monthly lesson plans at a local middle school.

**Conferences and Presentations**

SACNAS Fall 2018

* Attended the Society for Advancement of Chicanos/Hispanics and Native Americans in Science Conference, where I attended panels and learned about research and graduate school opportunities including the bridge programs.

Dia de la Fisica Fall 2018

* Participated in the “Day of Physics” seminar at the Southwest Research institute where we toured the laboratories and was provided with the opportunity to connect with other Hispanic and Latin physicists.

CUWiP Spring 2019

* Attended the Conference for Undergraduate Women in Physics and presented an overview of the Barium Tagging work conducted in the NEXT experiment including a description of the process for detection of a single Barium atom after the decay of Xenon through Single Molecule Fluorescence Imaging (SMFI).

ACES Research Symposium Spring 2019

* Poster presentation detailing the creation and development of a vacuum sealed microfluidic membrane to test in house developed dye derivatives when exposed to Barium.

**Leadership**

Physics Clinic Manager Fall 2018-Present

* Promoted to a management position and tasked with creating the weekly schedule for the tutors, and hiring new tutors along with the normal tutor responsibilities.

**Work History**

Server 2014-Present

* Worked as a server at several different establishments, ranging from a local diner to an upscale restaurant where I learned and perfected skills such as public speaking, multitasking, time management, and conveying a message effectively.

**Skills**

* Computer languages: Python, MATLAB
* Software: Tableau, SolidWorks, AutoCAD
* Languages: Fluent Spanish and English
* Technical: Welding, soldering, operating heavy machinery

**\*REFERENCES UPON REQUEST\***