PEYTON PHYSICS-ASTRONOMY

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EDUCATION

The University of Texas at Austin, Austin, TX May 2021
Bachelor of Science in Physics, GPA 3.4
Bachelor of Science in Astronomy

- Elements of Computing Certificate

TECHNICAL SKILLS

- Proficient in Python and Excel; Familiar with R; Exposed to SQL

RESEARCH EXPERIENCE

Oden Institute for Computational Engineering, The University of Texas at Austin, Austin, TX May 2020 – Present
Undergraduate Research Assistant

- Implemented a computational mechanobiological model using Python/MATLAB
- Simulated VIC contractile behavior in real cell geometry using the Finite Element Method
- Developed computational biomechanical models using Image Processing
- •Analyzed micro-CT data using Python to predict heart valve mechanistic response

White Dwarf Research, Freshman Research Initiative, Austin, TX January 2018 – May 2020
Undergraduate Research Mentor

- Hands-on in lab to direct students in weekly assignments, overview of analysis on Kepler 2 data in search for color changing White Dwarfs
- Developed Python based Aperture Photometry comparable in efficacy to 1979 FORTRAN black box code.
- Use of Geographic Information Systems to build all sky mosaics to monitor anthropogenic light pollution.
- Designed poster and presented research at the Undergraduate Research Forum in Spring 2018 and Spring 2019

PROJECTS

- **PET Detector Design** – worked under Dr. Karol Lang to construct simulations of Positron Emission Tomography in Geant4andanalyzein root for highest efficiency in timing, energy resolution, and image reconstruction.
- **Crowded Cluster Aperture Photometry** – developed comparable software for 1979 FORTRAN aperture photometry with experimental AstroPy code for large crowded cluster data sets.

CAMPUS INVOLVEMENT

PMA Board for Student Advocacy, The University of Texas at Austin, Austin, TX April 2019 – May 2020
Committee Chairman

- Brought inadequacies of gender climate issues within Physics, Math, and Astronomy departments to focus
- Founded a class to cultivate a sense of community within the UT Physics department
- Increased ratio of female to male learning assistants within Physics department

Sanger Learning Center, The University of Texas at Austin, Austin, TX January 2018 – Present
STEM Tutor

- Routinely hosted 1-1 sessions with students to analyze areas of difficulty in upper division Physics, Math, Conversational English and Astronomy courses to provide in depth understanding of topic.
- Trained new tutors in independent learning techniques and piloted “layman” tutoring regime for STEM
- Developed Online Tutoring Infrastructure due to COVID-19