ASHLEY NICOLE WARNER

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Education

University of California, San Diego

B.S. in Physics GPA: 3.389 — January 2016 – December 2018

Pursued Theatre B.A. GPA: 3.5 — October 2012 – June 2013

Mt. San Jacinto College

Pursued Physics and General Ed GPA: 4.0 — August 2014 – May 2015

President's Honor Roll

Palomar Community College

Pursued General Ed GPA: 3.88 — August 2013 – May 2014

Work Experience

Undergraduate Researcher for FRANO X LAB — Nov. 2017 – Present

- Investigated the magnetic properties of quantum materials using soft x-ray scattering techniques and analyzed data using Python and Mathematica.
- Logged 50+ hours of beamtime at the Advanced Light Source at Lawrence Berkeley National Lab.
- Studied and analyzed the temperature dependent magnetic domain wall effects of rare-earth nickelate thin films from a beamtime at Brookhaven National Lab.
- Attended the 2018 ALS User Meeting and learned various synchrotron techniques through different workshops and tutorials offered.
- Designed an algorithm using Python to map the intensity values of each pixel on CCD images to their corresponding reciprocal space vector components.
- Paper in progress revealing information on temperature dependent magnetic domain walls of rare earth nickelate thin films.

Media Coordinator and Physics Consultant Intern for YouTube business Physics Girl™ — June 2016 – January 2018

- Brainstormed and realized ideas for videos and outreach, such as demos to present, topics to discuss for content, and how to get more youth involved in science.
- Solidified my conceptual understanding of science by effectively communicating physics phenomena on and off camera. Answered questions viewers have about various topics.
- Utilized my adept skills in Adobe Photoshop to create amusing and educational content.
- Managed *Physics Girl* social media by posting fun physics topics and comics as well as informing fans about up and coming breakthroughs in science and technology.

Student Web Developer and Information Technology Assistant for the Physics Computing Facility at UC San Diego — March 2017 – Nov. 2017

- Crafted websites using Wordpress, HTML, and CSS for UCSD's physics department.
- Created the Shelly Schultz Symposium RSVP website as well as updated content for convention, research lab, class websites etc.
- Installed new software, trouble shoot devices and solve tech problems for physics faculty.

Awards & Achievements

- Recipient of Service to the Campus Community Award by UC San Diego's Physics Department 2018.
- Recipient of the William A. Lee Undergraduate Summer Research Scholarship 2018. Authored and presented a poster on summer research at the William A. Lee Undergraduate Research Awards.
- Awarded grant from National Science Foundation for filming educational physics videos under Professor Adam Burgasser.
- Raised $4,000 for physics and engineering outreach event at The Fleet Science Center with over 200 attendees.
- Two time recipient for funding to attend cUWiP (conference for undergraduate women in physics).
- Awarded travel funds for the 2018 ALS User Meeting at Lawrence Berkeley National Labs.
- Women in Physics Group Grant Recipient: Awarded $1000 from American Physical Society on behalf of UCSD's UWiP.

Skills

Python	Mathematica	LaTeX
Adobe Photoshop	Final Cut Pro	Scientific Writing
HTML/CSS & Java	Leadership Skills	Public Speaking
SolidWorks	Material Synthesis of High Entropy Alloys	

Significant Projects

Completed group research project with two other students on doping effects on superconductivity in a cobalt doped high entropy alloy. Included material synthesis, preparation, research paper and presentation.

Completed group engineering project with one other student that integrated an Arduino Uno, circuit components and a small motorized chassis. Used infrared technology to quickly avoid approaching obstacles.

Relevant Coursework

- *Physics 4A – 4E:* intensive 5 quarter lower division physics sequence specifically designed for physics majors.
- *Physics 100A & 100B:* Advanced Electromagnetism and Electrodynamics. Included Fourier Transforms, Biot-Savart and Maxwell's Equations.
- *Physics 105 A:* Advanced Computational Analysis using Mathematica. Discussed Fourier series and integrals, boundary value problems, Green's functions, etc.
- *Physics 110A & 110B:* Advanced Mechanics, Lagrangians, Hamiltonians, and system constraints.
- *Physics 120:* Circuits and Electronics Theory and Laboratory. Built successful circuits with logic gates, active filters, sensors, and operational amplifiers.
- *Physics 130A & 130B:* Advanced Quantum Mechanics, including Harmonic Oscillators, Perturbation Theory, Angular Momentum, Spin, etc.
- *Physics 140A:* Advanced Statistical and Thermal Physics. Integrated treatment of thermodynamics and statistical mechanics.
- *Physics 124:* Laboratory project course. Featured creating an experimental apparatus using computer interfacing.
- *Physics 133:* Condensed Matter/Materials Science Laboratory. Project oriented course under Dr. M Brain Maple. Developed, executed, documented and presented entire experimental plan.

Extracurricular and Volunteer Work

Undergraduate Women in Physics (UWiP) – President October 2016 – March 2017

- ❖ Led weekly meetings and delegated tasks to other undergraduate STEM majors.
- ❖ Organized various programs to mentor physics students such as Mentor Women in Physics, graduate panels, personal advising on work-life balance and more.
- ❖ Worked closely with students, various faculty members, and outside organizations for large projects that introduced science to underserved children.
- ❖ Worked with cabinet members to facilitate the travel and funding for women+ physics majors to attend cUWiP (conference for undergraduate women in physics) as well as apply for and be awarded the APS Women in Physics Grant for UWiP.

San Diego's Girls Dream Big Science and Engineering Night – Event Coordinator May 2017

- ❖ Organized *San Diego's Girls Dream Big Science and Engineering Night* at the Fleet Science Center, which included various scientific demos and presentations with renowned science communicators Dianna Cowern from *Physics Girl* and Emily Calandrelli from *Xploration Outer Space*.

San Diego's High Tech Science Fair – Volunteer January 2018

- ❖ Represented UC San Diego at local outreach event where hundreds of middle and high school students from socioeconomically disadvantaged communities in Southern California came to learn about the tech and research industry in San Diego.
- ❖ Recruited various other scientists to represent UC San Diego and demo a maglev track.

Institute of the Americas Science & Innovation Summer Camp - Volunteer & Planning Asst. July 2018

- ❖ Assisted in the organization and presentation of physics demos to present to high school students traveling from Central and South America.

UC San Diego Physics Department Digital Art Contributions

- ❖ Designed the UC San Diego department t-shirts, UWiP banner, and graduation stoles.
- ❖ UC San Diego physics mug and sweatshirt items in progress per request of the department chair.