

Helin Henstridge
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EDUCATION

UC San Diego | La Jolla, CA, September 2021-June 2025

- Bachelor of Science, Major in Physics with Specialization in Biophysics, Minor in Mathematics
- GPA: 3.615
- Relevant course projects:
 - Linear algebra
 - Used Python programming to create a portfolio of allocations for 1,000 companies using singular value decomposition with groupmates
 - Introduction to Python
 - Created a game of Hangman, including the word bank and classic stick figure
 - Introduction to geophysics
 - Wrote a literature review on what properties of the lithosphere make it like a tectonic plate
 - Introduction to biophysics
 - Presented properties of auditory neurons that can be represented as physical systems (neuron shape, channel densities, and channel mechanosensitivity)
 - Condensed matter lab
 - Measured the Integer Quantum Hall Effect in Gallium Arsenide using a cryogenic fridge in a group with other students
 - Circuit analysis lab
 - Built circuits using different components (i.e., transformer, JFET, MOSFET, etc.) to test their output compared with expected output with a partner
 - Analyzed circuits to troubleshoot incorrect set-up or broken components

RESEARCH AND CLUB EXPERIENCE

Researcher/Experimenter, Dr. Leonid Butov's Condensed Matter Lab; University of California – San Diego, CA – September 2023 – June 2025

- Aligned optical equipment, performed data analysis of a CCD camera using Python, and collected data using a computer program to take CCD images of a laser-excited sample
- Collaborated with graduate students on experiments on the effects of varying magnetic fields and laser excitation power on exciton transport
- Training in the usage of cryogenics, CCD usage/analysis, and laser excitation

Volunteer Researcher/Experimenter, Dr. Olivia Graeve's Xtreme Materials Lab; University of California – San Diego, CA – October 2023 – May 2024, October 2024 – June 2025

- Collaborated in writing a literature review about optical, magnetic, and electrical properties of ceramic metal oxides by reading, summarizing and articulating to peers and supervisors the relevant conclusions and topics of relevant papers
- Assisted in the creation of a database of properties of carbide materials for aerospace purposes

Volunteer Researcher/Experimenter, Dr. William Kristan's Neurobiology Lab; University of California – San Diego, CA – September 2021 - June 2022

- Design and execution of my own research experiment to measure phototaxis of planarians temporally and spatially, including how their replication affects their phototaxis
- Created varying light gradients for planarians; established a system of computers, computer programs, a handheld projector, camera, and microscope; utilized microscopy techniques to record the planarians movement and analyze their phototaxis after experimentation

Society of Physics Students, UCSD; La Jolla, CA – April 2023 – June 2025

- Served on the media team for the student-run organization working to form connections between students and professors in the field of physics
- Participated in biweekly meetings aimed at increasing the club's visibility and campus reach to students

CONFERENCE ABSTRACTS AND PUBLICATIONS

- Zhou, Zhiwen, et al. "Long-Range Spatial Extension of Exciton States in van Der Waals Heterostructure." *ArXiv (Cornell University)*, 27 Aug. 2025, <https://doi.org/10.48550/arxiv.2508.20306>.
- Zhiwen Zhou, Erik A. Szwed, Will Brunner, **Helin Henstridge**, Lewis H. Fowler-Gerace, Leonid V. Butov. "Kinetics of transport of indirect excitons in van der Waals heterostructure." *APS March Meeting*, Washington D.C., USA, 2025
- Zhiwen Zhou, Erik A. Szwed, Will Brunner, **Helin Henstridge**, Lewis H. Fowler-Gerace, Leonid V. Butov. "Magnetoexcitons in van der Waals heterostructure." *APS March Meeting*, Washington D.C., USA, 2025

PRESENTATIONS

Undergraduate Scholarship Research Award (USRA)

- Presented findings in a final poster presentation to peers, professors, and program donors

Mickey Leland Energy Fellowship (MLEF), Department of Energy

- Presented findings in a final presentation to peers and DOE personnel, a written paper and poster presentation at the Office of Fossil Energy and Carbon Management Conference

HONORS, AWARDS, AND FELLOWSHIPS

Undergraduate Scholarship Research Award Recipient, UCSD; La Jolla, CA – June 2024 – September 2024

- Measured the Landé g-factor in transition metal dichalcogenide heterostructures
- Prepared for time-resolved measurements of indirect exciton transport
- Troubleshooted experimental set-up for equipment that no longer worked and used optical equipment to guide and control diode laser emission on the sample
- Presented findings in a final presentation to peers, professors, and program donors

MLEF Student Fellow, Department of Energy; Los Alamos National Lab, NM – May 2024 – August 2024

- Monitored simulated underground hydrogen storage in four different rock physics formations by completing interpolation on seismic data using python scripts including Obspy, Scipy, Pandas and Matplotlib and by performing interpolation on seismic data. Presented results in multiple formatting including scatter plots, movies and mesh plots
- Presented findings in a final presentation to peers and DOE personnel, a written paper and poster presentation at the Office of Fossil Energy and Carbon Management Conference

Regents Scholarship, UCSD; La Jolla, CAA – September 2021 – June 2025

WORK AND MENTORSHIP EXPERIENCE

Supplemental Instruction (SI) Leader, Academic Achievement Hub; University of California – San Diego, CA – April 2022 – June 2025

- Served as a SI Leader and Course Leader helping students better understand curriculum and course material through facilitation and scaffolded instruction
- Supervised other leaders by providing guidance on session plans, observing their sessions and providing feedback for improvement. Planned weekly team meetings for training and community building
- Attended lectures, took notes, and created 80-minute session plans weekly that were relevant to the current course topic. Facilitated two sessions per week, assisted students in lecture, and answered student questions

Student Employee, Pines Restaurant; La Jolla, CA – September 2021 – March 2024

- Served in multiple roles including student worker, student lead, and student manager.
- Managed other student employees by creating schedules, tracking attendance, facilitated orientations and trainings to ensure safety measures were followed. Communicated between student workers and restaurant staff and customers.
- Customer service; food preparation; assigned and streamlined tasks to ensure consistent work flow, especially for rushes and holiday shifts

SKILLS

- Python
- MATLAB
- MS Office (Word, PowerPoint, Excel)
- Bilingual in English and Turkish