# David Llewellyn Smith

Physics Major at UCLA, Minors in Math, French, and Atmospheric & Oceanic Science

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## EDUCATION

**University of California, Los Angeles** — *Physics w/ minors in Math, Atmospheric & Oceanic Sciences, and French. 3.89 GPA*

September 2021 - June 2025

Physics: Classical Mechanics (105), Electricity and Magnetism (110), Quantum Mechanics (115), Thermodynamics (112), Particle Physics (126), Cosmology (128), Acoustics Lab (180D)

Math: Linear Algebra (115A), Analysis (131A), Systems of Differential Equations (134), Mathematical Models (142), Applied Numerical Methods (151A)

Atmospheric & Oceanic Sciences: Physical Oceanography (103), Machine Learning (111), Fluid Dynamics (120), Numerical Methods in AOS (180), Intermediate Atmospheric Dynamics (188)

**University of California, San Diego**

September 2019 - March 2021

Math 20C, D, and E - Multivariable Calculus, Differential Equations

**San Diego Mesa College**

September 2017 - June 2021

Math 150-151, 245, 254: Calculus, Linear Algebra, Discrete Math

Political Science 101, 102: Intro to Poli Sci, The American Political System

**La Jolla High School,** Class of 2021 *Salutatorian*

September 2017 - June 2021

## WORK EXPERIENCE

**MPL Internship Program,** Scripps Institution of Oceanography

June 2024 - August 2024

Comparing fog formation data from the Yellow Sea west of Korea to numerical simulations, as part of the Fog and Turbulence Interactions in the Marine Atmosphere (FATIMA) project, with Dr. Luc Lenain.

**Reader**, UCLA Physics Department

January 2024 - March 2024
Graded and provided comments to students for weekly homeworks, midterms, and final for Physics 5B (Physics for Life Sciences Majors: Thermodynamics, Fluids, Waves, Light, and Optics)

**Relativistic Laser-Plasma Simulation Group,** UCSD — *Student Researcher*
July 2023 - September 2023
Utilized advanced numerical software to simulate helical laser waves' interaction with high energy plasma, working with Dr. Alexey Arefiev.

**Woods Hole Oceanographic Institution** — *Guest Student Researcher*
June 2022 - August 2022
Analyzed 3 months worth of temperature, tide, wind wave, and current speed/direction data collected in Buzzards Bay, including identifying breaking waves using backscatter data and a high-resolution camera. Worked with Dr. Malcolm Scully and Dr. Seth Zippel.

**Regents Pizzeria** — *Cashier*
June 2021 - September 2021
Took orders, bussed tables, customer service.

**Air-Sea Interaction Laboratory,** SIO — *Intern*
June 2020 - April 2021
Used Matlab to simulate breaking waves using a Lagrangian approach, examining bandwidth and slope. Worked with Dr. Nick Pizzo.

## PUBLICATIONS

Nick Pizzo, Ethan Murray, David Llewellyn Smith, and Luc Lenain, 2021. The role of bandwidth in setting the breaking slope threshold of deep-water focusing wave packets, Physics of Fluids 33, 111706, doi:10.1063/5.0072166.

## COURSE PROJECTS

AOS 180 Final Project - Vortex Dipole.
- Simulated from scratch a vortex dipole colliding with a no-slip boundary (code)

Physics 128 Final Project - The Ultimate Fate of the Universe
Math 151A Final Project - Applying Newton's Method to the Particle-in-a-box problem

## SKILLS

Spoken Languages: English (fluent), French (fluent), Spanish (proficient)
Technical: Matlab, C++, Python, Java, Arduino, Autocad, Tracker, Docker, Latex