

LUCAS LOPEZ

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MECHANICAL ENGINEERING | U.S. CITIZEN | ACTIVE DOE Q CLEARANCE

EDUCATION

University of New Mexico, School of Engineering

December 2026

Bachelor of Science in Mechanical Engineering | GPA: 3.2

ENGINEERING EXPERIENCE

Sandia National Laboratories - Above Ground Testing Accelerator Operations (1332)

Feb 2026 - Present

Mechanical Engineering R&D Intern | Saturn, HERMES III, and SPHINX Pulsed-Power Accelerators

- Designed a high-intensity non-activating cathode for HERMES III; created the PTC Creo model and ASME Y14.5-compliant GD&T drawing definition, released the design, and coordinated machining into finished hardware.
- Design new accelerator hardware and convert legacy drawings into fully defined Creo models and production drawings, using Windchill PLM for configuration control, revision management, and traceability.
- Perform ANSYS structural FEA, including static strength, pressure/vacuum loading, and eigenvalue buckling, to evaluate stress, deformation, factor of safety, and design integrity.
- Prototype and fabricate functional components through additive manufacturing to support fit checks, design iteration, testing, and deployment.

Sandia National Laboratories - Metallurgy & Materials Joining (1831)

Dec 2023 - Feb 2026

Mechanical Engineering R&D Intern

- Prepared, sectioned, chemically etched, and analyzed engineering materials using optical microscopy and microhardness testing to support failure analysis and materials research.
- Contributed to experimental development and materials characterization; received a June 2025 SPOTEA recognition for technical contributions.

Aperiodic Labs - University of New Mexico Electrical & Computer Engineering

Feb 2023 - Dec 2023

Research Assistant

- Assembled and operated a Marx generator, high-voltage pulsed-power systems, oscilloscopes, and vacuum equipment; designed experiments and hardware using MATLAB and SolidWorks.

ENGINEERING PROJECTS & LEADERSHIP

LOBO Motorsports - Formula SAE

UNM

Aerodynamics Team Member

- Performed STAR-CCM+ aerodynamic CFD using SLURM-based HPC workflows and supported ANSYS/SolidWorks structural design and validation of performance-critical components.
- Manufactured carbon-fiber structures using wet layup and prepreg processes and secured a sponsorship providing 115 yards of carbon-fiber material.

TECHNICAL SKILLS

CAD / PLM: PTC Creo, SolidWorks, Windchill, engineering drawings, GD&T (ASME Y14.5)

Analysis: ANSYS Mechanical, structural FEA, eigenvalue buckling, STAR-CCM+, CFD, MATLAB, design validation

Manufacturing / Test: Additive manufacturing, rapid prototyping, composite layup, machining coordination, soldering, oscilloscopes, vacuum systems

Materials / Computing: Metallography, microscopy, microhardness, chemical etching, high-performance computing (SLURM)

PUBLICATION & RECOGNITION

Electrolytic Etch Uniformity of 304L Stainless Steel - 34th Rio Grande Symposium on Advanced Materials, 2024 | First Author | 2nd Place Undergraduate Poster