# José María Barbeito

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## EDUCATION

**North Carolina State University**, ***Raleigh, NC***

- **B.S.E:** Chemical Engineering; **Minor:** Material Science Engineering *Expected May 2025*
- **Current Cumulative GPA**: 3.7/4.0

## WORK EXPERIENCE

**Process Engineering Co-Op, Wolfspeed, *Durham, NC*** *Summer 2023, 2024, Academic Year 2023-2024,2024-2025*

- Utilized statistical process control (SPC) and new experimental designs to fine tune machines and eliminate inefficiencies in the Silicon Carbide (SiC) Wafering Division, including software analysis, Design of Experiment (DOE) testing methods, and mechanical trials
- Worked closely with engineers on specific cutting edge processes required in the manufacturing of SiC wafers
- Designed and tested new proprietary systems to enhance yield, lower operating costs, and increase efficiency using LEAN system, MSA, and SPC
- Trained in operation and maintenance of Chemical Vapor Deposition (CVD) tool designed to grow doped SiC layer
- Worked closely with engineers to design and plan new factory floors, ensuring proper tool environments and safety requirements
- Facilitated installation and qualification of Fourier Transform Infrared Spectrometer metrology tools in the SiC Epitaxial Division
- Engaged in Process Change Review Boards (PCRB's) and designing of Gauge Repeatability and Reproducibility (GR&R's) for recipe qualification for tools within class 100 cleanrooms

**Doble W Servicios, *Buenos Aires, Argentina*** *February 2021 – March 2021*

- Independently-arranged work abroad experience at an armoring company. I disassembled and reassembled various cars and trucks to install bulletproof glass and kevlar plating for the Argentine Police Force, averaging ten fully outfitted cars per day
- Constructed bulletproof glass through cutting, assembling and kilning multiple layers of glass and specialty polycarbonate before sanding and installing

## PROJECT EXPERIENCE

**Design and Manufacturing of Rotating Detonation Engine for Novel Power Generation** *Academic Year 2024-2025*

- A member in a research team with NC State Liquid Rocketry Lab, focused on developing a turbine aimed at downstream power generation utilizing supersonic exhaust from a Rotating Detonation Engine (RDE)
- Developed control system that operated the turbine and handled data acquisition utilizing an in-house LabView program and a laboratory-grade suite of sensors, devices, and control equipment
- Achieved rudimentary fluid dynamic modeling of supersonic flow through turbine after detonation chamber to estimate thermodynamic models
- Slated to present in the AIAA 2025 Region II Student Conference in order to compete against other universities

**Liquid Bromine Distillation** *December 2021*

- Distilled 0.98 moles of liquid bromine from sodium bromide using a variety of acids, reagents, and reactants. Utilized proper safety procedures and PPE

**TECHNICAL SKILLS:** Woodworking, Metalworking, Lathe, Crystalline Structure Fabrication, Drone/Digital Cinematography
**ENGINEERING SKILLS:** LEAN systems, 6 Sigma, Measurement Systems Analysis, Statistical Process Control, 5S
**SOFTWARE SKILLS:** JMP, SPACE, SQL, Proprietary Manufacturing Systems, Microsoft Office Tools, JavaScript and JSL,
**LANGUAGES:** Spanish (Native), German (Beginner)
**OTHER INTERESTS**: Rock Climbing, Scuba Diving, Drums, Guitar, Computer Assembly, Backpacking, Crystal Growing