

PARIE K. PATEL

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EDUCATION

Rutgers University, New Brunswick, NJ

Expected Spring 2027

Mechanical Engineering and Environmental Policy, Institutions & Behavior

Minor: Environmental Geomatics (GIS, GPS, Remote Sensing)

PROFILE

Mechanical engineering and environmental policy student with experience spanning mechanical design, materials characterization, infrastructure, energy systems, pharmaceutical sustainability, and research. Seeking full time engineering opportunities following Spring 2027 graduation.

ENGINEERING & INDUSTRY EXPERIENCE

PSEG Institute for Sustainability Studies Green Teams, Eisai Project

Summer 2026

Montclair State University | Pharmaceutical sustainability and Scope 3 data project

- Supported Eisai Scope 3 emissions work through a structured data inventory and ownership mapping across procurement, finance, and logistics functions.
- Reviewed NAICS classifications and reporting workflows to identify redundant steps, manual handoffs, documentation gaps, and opportunities to strengthen reporting and review readiness.

New Jersey Department of Environmental Protection, Dam Safety Engineer

Summer 2024

- Performed on site dam inspections across New Jersey and prepared technical condition reports documenting observed conditions and recommended remediation.
- Applied hydraulics, geology, and infrastructure concepts while working across government, corporate, and public facing contexts.

New Jersey Department of Environmental Protection, Bioplastics Policy Research

Spring 2025

Intern

- Performed legislative and regulatory analysis of New Jersey plastic reduction policy and related internal guidance.
- Compared recycling and composting approaches for bioplastics across states and identified stakeholders relevant to policy development.

RESEARCH EXPERIENCE

George H. Cook Honors Thesis, Lead Lined Water Service Lines

Fall 2026 to Present

- Conducting X ray fluorescence (XRF) screening of lead lined galvanized iron drinking water service lines to characterize lead, iron, and copper profiles and compare pipe scale composition from Trenton and New Brunswick.
- Research plan extends to micro sampling with ICP MS and SEM EDS for multi element, isotopic, spatial, and morphology analysis of mineral layers.

NSF REU Undergraduate Researcher, Marshall University, WV

Summer 2025

Mentor: Dr. Prabir Patra | Biomaterials and mechanical testing

- Investigated the mechanical behavior of GAG containing collagen like biomaterials and completed five tensile and mechanical tests with load displacement data collection and analysis.
- Evaluated calibration, necking, and specimen geometry as experimental limitations and identified dog bone specimen geometry as a potential improvement for test reliability.
- Applied mechanics, stress strain concepts, materials science, and nanomaterials concepts to biomedical applications of mechanical engineering.

ENGINEERING PROJECTS

Touchdown: Passive Self Leveling UAV Landing System, Rutgers MAE **Fall 2025**

- Collaborated on a seven member team developing a lightweight passive landing system using four bar linkages, damping, and adaptive feet without motors or sensors.
- Integrated materials selection, manufacturability and cost analysis, stress and fatigue analysis, spring design, and SolidWorks finite element analysis into the team design process.
- Team analysis confirmed minimum factors of safety above 4.9 under worst case loading and identified geometry changes that could reduce weight while maintaining structural integrity.

DOE / NREL Marine Energy Collegiate Competition **Fall 2023 to Fall 2025**

- Prepared SolidWorks technical drawings and documentation for turbine mechanical components and iterated designs based on trials and advisor feedback.
- Contributed to a multidisciplinary collegiate competition focused on marine renewable energy system development and technical communication.

Internal Combustion Engine Performance Laboratory, Rutgers MAE **Fall 2026**

- Tested a Honda four stroke engine across throttle and RPM conditions and calculated brake power, torque, BMEP, fuel consumption, and conversion efficiency from measured operating data.
- Identified peak observed efficiency of approximately 38% at 2000 RPM and documented experimental uncertainty from instrument resolution, operator measurement, and equipment condition.

LEADERSHIP & COMMUNICATION

Service Chair, Omega Phi Alpha, Rutgers University **2025 to Fall 2026**

- Coordinated service participation for approximately 70 members, each responsible for completing a 15 hour service requirement, and tracked chapter service activities and participation.

Rutgers Climate and Energy Institute, Communications Intern **Summer 2025 to Present**

- Updated institute web content, newsletters, and weekly email communications while translating complex climate and energy topics for broader audiences.
- Created visual outreach materials using Canva and Adobe Photoshop and supported recurring institute communications for climate and energy research.

EPIB Trail, Editor and Graphic Designer **Fall 2025 to Spring 2026**

- Workshopped environmental justice writing for technical accuracy, clarity, and concise communication and helped present complex environmental issues to general audiences.

SELECTED ENVIRONMENTAL POLICY RESEARCH

Sustainable Building Policy and LEED Analysis **Spring 2024**

- Evaluated limitations of LEED certification related to energy performance, regional context, life cycle considerations, and accountability.
- Proposed stronger life cycle, community focused, and audit based approaches to resilient and sustainable infrastructure policy.

TECHNICAL SKILLS

Engineering & Analysis: SolidWorks, AutoCAD, Onshape, MATLAB, Python, Java, mechanical and tensile testing, technical reporting

Research & Instrumentation: XRF; planned thesis methods include ICP MS and SEM EDS

Environmental & Data: GIS, GPS, remote sensing, Scope 3 data inventory, NAICS review

Design & Communication: Canva, Adobe Photoshop, technical writing and presentation

Language: Spanish proficiency