Donovan Burke

Willis, TX | djburke@seas.upenn.edu | (281)-827-3333

Solution-driven mechanical engineering student skilled in rapid design and fabrication. Collaborative, goal-oriented, with a "get-it-done" mentality. Ready to learn more about the future of aerospace, automotive, and robotic engineering in fast-paced industry setting.

EDUCATION

University of Pennsylvania | Philadelphia, PA **Aug 2025 – May 2028**

Bachelor of Science and Engineering in Mechanical Engineering and Applied Mechanics ***GPA: 3.87/4.00***

The Woodlands College Park High School | The Woodlands, TX **Aug 2021 – May 2025**

Graduated Summa Cum Laude ***GPA: 4.00 / 4.00***

EXPERIENCE

Electric Era | Seattle, Washington | *Implementation Engineer Intern* **May 2026 - Present**

- Design and develop mechanical components to support deployment of Electric Era's PowerNode fast-charging stations.
- Source and qualify suppliers for mechanical components, managing the process from design through prototype production.
- Collaborate cross-functionally with an engineering team of former SpaceX engineers to advance EV charging infrastructure.

Project Wavefront | Philadelphia, Pennsylvania | *Propulsion Engineer* **Feb 2026 - Present**

- Designing the cooling system for Mark I, the first undergraduate-built long-duration rotating detonation rocket engine.
- Producing parametric CAD models Creo Parametric for the cooling jacket, designed for additive manufacturing in steel.
- Reviewing design choices against RDRE-specific cooling literature and incorporating feedback from industry mentors.

Penn Jet Propulsion | University of Pennsylvania, PA | *R&D Team – Modeling and Fabrication Lead* **Sept 2025 - Present**

- Collaborate with student and professional engineers to design and develop an afterburner system for a micro-turbojet engine.
- Lead the design of the afterburner chamber and integrated flameholder, delegating subsystem work across the team.
- Research materials selection for high-temperature, high-stress conditions in supersonic exhaust environments.

ArmAssist | Conroe, TX | *Founder, Engineering Team Lead* **August 2022 – Present**

- Led a team in developing a lightweight, concealable arm orthotic for muscular dystrophy and atrophy patients.
- Orthotic produced 5x the force of industry leader while projected to be 5x cheaper and 10x lighter, as indicated by early testing.
- Designed custom orthotic and innovative design for an integrated compliant mechanism and artificial muscle actuation system.
- Presented at the Regeneron International Science and Engineering Fair (ISEF), winning 4th place in Statics and Dynamics**.**

Material Robotics Lab | Boston University, MA | *Student Researcher, RISE Program* **July 2024 – August 2024**

- Designed and manufactured continuum bodies for a millimeter-scale bronchoscope under the guidance of Dr. Sheila Russo.
- Bronchoscope successful in ex-vivo testing, largely a result of continuum bodies facilitating 1 additional degree of freedom.
- Findings presented at the Boston University Summer Symposium to panels of professors and PhD students.

The Mu Lab | University of Iowa, IA | *Student Researcher, SSTP Program* **June 2023 – July 2023**

- Designed fibroin-based, 3D printed therapeutic patches to mimic anisotropic deformation under the guidance of Dr. Xuan Mu.
- Created over 60 finalized patches with a poison's ratio of 0.84, indicating significant progress in a multi-year project.
- Findings presented at the University of Iowa Summer Symposium to panels of professors and PhD students.

ACTIVITIES

Wharton Undergraduate Entrepreneurship Club | *Venture Capital Committee, Incubator Committee* **Sept 2025 – Present**

- Engaged in case studies and workshops that simulate venture decision-making, including startup diligence and market analysis.
- Developed foundational skills in pitch evaluation, term sheets, industry research, and leadership in technical start-ups.

Yale Alumni Service Corp, Global Volunteers | International | *Team Lead & Volunteer Service Member* **Mar 2022 – Present**

- Led sub-teams of volunteers in impoverished or damaged communities in Argentina, Southern Texas, Puerto Rico, and Peru.
- Contributed over 200 hours of service, assisted over 500 individuals, and contributed to over 8 projects across 4 years.

Tracey Casey-Arnold Consulting LLC | Austin, TX | *Consulting Intern* **June 2025 – Present**

- Advise 6 SMBs on integrating AI into operations, marketing, and client-facing processes, saving 10 hours weekly per client
- Rebuilt the intern and onboarding process, cutting review time by 40% and growing the applicant pool by 30% for Fall 2026.

Penn Club Tennis | Club Player **Sept 2025 – Present**

Penn Access Engineering **Jan 2026 – Present**

SKILLS/INTERESTS

- ***Software:*** *CAD (SolidWorks, Fusion360) Microsoft Office, ARCGIS, PCB creation, Laser Cutting,* Robot Operating System 2.
- ***Other Skills:*** Python, basic manufacturing techniques, great team player, learns from mistakes, determined.
- ***Interests:*** Jet engines, motorsport, love to play tennis and pickleball, Houston Texans fan, ultimate frisbee player.