Dennis Parnell Jr.

PhD Student, Mechanical Engineering

(901) 463-0729 | drparnelljr@gmail.com | linkedin.com/in/dennisparnelljr

Gainesville, FL

EDUCATION

Doctor of Philosophy in Mechanical Engineering May 2025
University of Florida, Gainesville

Master of Science in Mechanical Engineering Dec. 2021
University of Florida, Gainesville

Bachelor of Science in Mechanical Engineering May 2019
The University of Alabama, Tuscaloosa
Cum Laude

RESEARCH EXPERIENCE

Graduate Research Assistant, University of Florida Aug. 2019 – Present
Advisor*:* Mark Sheplak, PhD
Dissertation: *High-Bandwidth Heat Flux Sensor Measurements in Hypersonic Flows*

- Developing a MEMS-based heat flux sensor for insight the dynamics of hypersonic boundary layer transition to enable the design of hypersonic vehicles

SURF Intern, University of Florida May 2018 – Aug. 2018
Advisor*:* Mark Sheplak, PhD
Project: *Design and Fabrication of a Platinum Resistor for a MEMS-Based Heat Flux Sensor*

- Fabricated thin film platinum resistors on a sapphire wafer to support the development of a MEMS heat flux sensor

Undergraduate Research Assistant, The University of Alabama Aug. 2017 – May 2018
Advisor*:* Joshua Bittle, PhD
Project: *Demonstrating a Direct-Injection Constant-Volume Combustion Chamber as a Validation Tool for Chemical Kinetic Modeling of Liquid Fuels*

- Collected and analyzed ignition delay data on n-heptane and iso-octane fuels to prove the Cetane Ignition Delay (CID) 510 system can be used to strengthen chemical kinetic model validation
- Placed second in the College of Engineering for the 2018 University of Alabama Undergraduate Research and Creative Activity Conference (URCA) poster presentation

PROFESSIONAL INTERNSHIPS

MEMS Manufacturing Engineering Intern, Collins Aerospace May 2019 – Aug. 2019

- Characterized a replacement glass frit paste for strain products by identifying the critical bond process variables
- Investigated a method to eliminate wafer fixtures during the iso-etch process to reduce scrap and improve operator ergonomics
- Qualified a new sputter deposition tool for an aluminum target to reduce material scrap, process time, and the workload on another tool

Engineering Co-op, Mercedes-Benz U.S. International Jan. 2016 – Aug. 2017

- Supervised a continuous improvement project for contractor manpower
- Created and managed a training program for shipping protection audits
- Created Polyworks models for carrier pallets to increase the speed of pallet repairs

PUBLICATION

Conference Paper

A. E. Suttle, B. T. Fisher, **D. R. Parnell Jr.** and J. A. Bittle, "Demonstrating a Direct-Injection Constant-Volume Combustion Chamber As a Validation Tool for Chemical Kinetic Modeling of Liquid Fuels," in *ASME 2018 Internal Combustion Engine Division Technical Conference*, San Diego, 2018.

FELLOWSHIPS AND AWARDS

Fellowships/Scholarships

Florida Education Fund McKnight Doctoral Fellowship	2019 – Present
Southeastern Conference (SEC) Engineering Deans Graduate Fellowship	2019 – Present
University of Florida Graduate School Preeminence Award	2019 – Present
The University of Alabama President's Cabinet Engineering Scholarship	2014 – 2019
The University of Alabama UA Scholar Award	2014 – 2019
The University of Alabama Engineering Leadership Scholarship	2014 – 2019

Awards

Most Outstanding Senior, National Society of Black Engineers (UA)	2019
BFSA Academic Excellence Award (UA)	2015 – 2019
National Society of Collegiate Scholars Inductee	2016
Phi Eta Sigma National Honor Society Inductee	2015

SERVICE

University

President, Gator McKnights Unite (UF)	2020 – Present
President, IMG Social Media Committee (UF)	2020 – Present
Panel Member, Junior Preview (UF)	2019 – Present
Mentor, Undergraduate Peer Partnering (UA)	2018 – 2019
Math Tutor, Mathematics Technology Learning Center (UA)	2018 – 2019
Ambassador, Cooperative Education Program (UA)	2017 – 2019
Vice President, National Society of Black Engineers (UA)	2017 – 2018
Parliamentarian, Collegiate 100 Black Men of America (UA)	2017 – 2018
Academic Excellence Chair, National Society of Black Engineers (UA)	2016 – 2017

Community

Robotics Instructor, Boy Scouts of America	2019
Judge, Regional Alabama Science Olympiad Tournament	2018 – 2019
Coach, 100 Black Men of America African American History Challenge	2017 – 2019
Volunteer, Habitat for Humanity	2017
Mentor, The Tuscaloosa Foundation Project	2016 – 2017
Facilitator, AmeriCORPS Leadership Conference	2015