

Hardeo M. Chin, B.S.A.E.

Ph.D. Student – Propulsion & Energy Research Laboratory
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EDUCATION:

Doctor of Philosophy in Mechanical Engineering, Expected 2021

University of Central Florida, Orlando, FL
Dissertation Title: TBD

Bachelor of Science in Aerospace Engineering, 2017

University of Central Florida, Orlando, FL

GRADUATE RESEARCH:

Negative Poisson's Ratio – Acoustic Dampening (May 2017 – Aug. 2017)

Siemens - Montreal

- Assisted in running experiments to test dampening characteristics of various geometrical combustion liners
- Obtained dampening measurements for frequency sweep of 200-2000 Hz using microphones to convert voltage readings into pressure values
- Investigated resonating frequencies for each data point to produce an absorption coefficient plot demonstrating how differential pressure influences acoustic dampening with varying geometric liners
- Analyzed the differential pressure across liner specimen to determine discharge coefficient

EXPERIENCE:

Propulsion Engineer (Aug. 2016 – April 2017)

University of Central Florida, Orlando, FL

Analysis & Design of a Hybrid Rocket - Senior Design Project

- Collaborated with classmates to design/build a hybrid rocket to attain maximum altitude
- Designed and analyzed fuel grain to determine optimal material and shape
- Fabricated converging-diverging nozzle to enhance thrust output and burn time from fuel grain
- Performed thermodynamic and propulsion analysis

Undergraduate Researcher (Dec. 2013 – Jan. 2017)

University of Central Florida, Orlando, FL

The Effects of Blade Mistuning on Vibration Localization - Dr. Jeffrey Kauffman

- Investigated the concepts of mistuned blade structures and vibration localization
- Implemented MATLAB-based simulations codes to determine statistics based parameter of mistuning
- Developed a mistuning experimental setup that will accommodate identical blades with variable coupling elements

Summer Fellow (June 2015 - Aug. 2015)

Summer Undergraduate Research Fellowship Program - University of California Irvine, Irvine, CA

Power Decay Law in Active Grid Generated Turbulence - Dr. John LaRue

- Performed calibration and experimental setup procedures using hot wire anemometry
- Conducted experimental tests under various velocities in wind tunnel

- Analyzed multiple data sets to determine isotropy and homogeneity range in turbulent flow
- Applied decay power law to isotropic and homogeneous section of flow

Quality Engineering Intern (May 2014 – Aug. 2014)

Pratt & Whitney – United Technologies Corporation, West Palm Beach, FL

Systems Engineering & Validation/Quality Engineering

- Lead project to certify welders on-site to increase capability
- Worked with Quality Engineers/Inspectors to provide technical support to the Systems Engineering & Validation assembly and test teams on issues with commercial/military engine programs
- Initiated, conducted, and closed a quality investigation on aircraft hardware and jet engines
- Studied and understood how the ACE initiatives are utilized throughout the site

PUBLICATIONS:

JOURNALS

Flores, W., Otero, M., **Chin, H.**, Ahmed, K., “Experimental Investigation of Acoustic Damping by Ellipsoidal Orifice Perforated Liner with Grazing and Bias Flow”, *In preparation for Journal of Turbomachinery*.

CONFERENCE PAPERS

Flores, W., Otero, M., **Chin, H.**, Ahmed, K., “Experimental Investigation of Acoustic Damping by Ellipsoidal Orifice Perforated Liner with Grazing and Bias Flow”, 63rd ASME Turbo Expo Meeting, *In preparation*

PRESENTATIONS:

Hardeo Chin & Dr. Jeffrey L. Kauffman (2016). The Effects of Intentional Blade Mistuning on Vibration Localization. Poster presentation in SACNAS: The National Diversity in STEM Conference. Long Beach, CA.

Hardeo Chin & Dr. Jeffrey L. Kauffman (2016). The Effects of Intentional Blade Mistuning on Vibration Localization. Poster presentation in Showcase of Undergraduate Research Excellence. UCF, Orlando, FL.

Hardeo Chin & Dr. Jeffrey L. Kauffman (2016). The Effects of Blade Mistuning. Poster presentation in Florida Undergraduate Research Conference, UT, Tampa, FL.

Hardeo Chin, Timothy Koster & Dr. John LaRue (2015). Power Law Decay in High-Intensity Active-Grid Generated Turbulence. Poster presentation in Summer Research Program Symposium, UCI, Irvine, CA.

Hardeo Chin & Dr. Jeffrey L. Kauffman (2015). The Effects of Blade Mistuning. Poster presentation in Showcase of Undergraduate Research Excellence, UCF, Orlando, FL.

LEADERSHIP:

President (May 2014 – May 2015)

National Society of Black Engineers – University of Central Florida Chapter

- Instill a vision for direction of the chapter which emphasized creative programming
- Work closely with the Chapter Executive Board to implement programs that reflect the vision
- Preside over all Chapter Executive Board meetings
- Awarded Large Distinguished chapter of the year & T.O.R.C.H. chapter of the year

Senator (May 2013 – May 2014)

National Society of Black Engineers – University of Central Florida Chapter

- Assist in running Executive Board meetings but enforcing Robert's Rules of Order
- Vote on behalf of the chapter in Regional/National Elections
- Conduct nomination and election process

Drum Instructor (April 2011 – Present)

Florida Conference of Seventh-day Adventists – Pathfinders

- Mentor younger drummers across the state of Florida and help them develop their skills as a percussionist

VOLUNTEERING:

Forest Lake Pathfinder Club (Aug. 2016 – Present)

- Developed drum corps team by teaching members the fundamentals of drumming
- Worked with fellow staff members to organize and run club events
- Traveled with drum corps to perform for various churches and community events

A Walk For Education

- Encouraged residents of lower income neighborhoods to consider post-secondary education
- Provided information by distributing booklets/pamphlets to about 20+ homes
- Stimulated children's interest with STEM activities

Coral Springs Pathfinder Club (Aug. 2006 – May 2012)

- Assisted to run club meetings and assisted with club activities involving 30+ children
- Demonstrated and taught children camping skills such as building tents, campfires, orienteering, and how to backpack
- Planned and implemented the yearly calendar

SKILLS:

Computer: MATLAB, LabVIEW, Solidworks, ANSYS Fluent, Office

Instrumentation: Hot-wire Anemometry, Operation of a Closed-Return Wind Tunnel

HONORS:

- Ronald E. McNair Scholar
- CAMP-YES Scholar
- Office of Research & Commercialization Doctoral Fellowship

PROFESSIONAL MEMBERSHIPS:

- American Institute of Aeronautics & Astronautics (AIAA)
- National Society of Black Engineers (NSBE)
- Society for the Advancement of Chicanos/Latinos and Native Americans in Science (SACNAS)