



# **PROPULSION RESEARCH CENTER**

THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

# Summer/Fall 2024 Recognition of Graduates

December 6, 2024



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## PROPULSION CENTER

*“Keep our relationships more important than tasks or problems (or winning).”* We wish all the graduates a successful and enjoyable future.





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# Summer/Fall 2024

## PRC Graduate Recognition Program

Shirts/Caps/Group Photo/Welcome

Lunch

**MASON DIXON**  
BAKERY — BISTRO

Highlights|

Recognition of Graduates

*PhD's, Master's, and Undergraduate Students*

Mentoring Resources





# Women in Defense – Tennessee Valley Chapter Rocket City Fellows





# Staschus Memorial Scholarship







# UAH Hosted Assistant Secretary of Defense




## JOIN US!


Innovation Roundtable with the Redstone Community


### BUILDING UPON THE ALABAMA DEFENSE ECOSYSTEM



 Date: Wed November 20th

 Time: 2:30-3:30 p.m.

 Location: Bldg Charger  
Union Theater  
4705 Holmes Ave NW  
Huntsville, AL 35899

 RSVP by November 18 to  
[osd.pentagon.ousd-r-e.mbx.st@mail.mil](mailto:osd.pentagon.ousd-r-e.mbx.st@mail.mil)



**The Honorable Aprille J. Ericsson, Ph.D.**

*Assistant Secretary of Defense  
for Science and Technology*



# AIAA Solid Rocket Short Course

## Dr. Frederick was an Instructor on Solid Rocket Overview and Combustion Instability



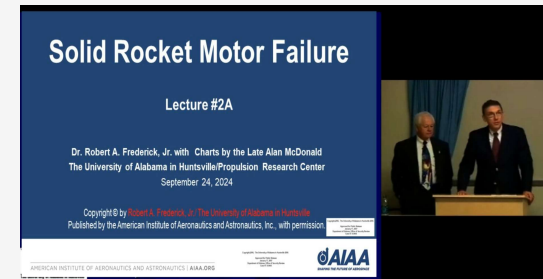
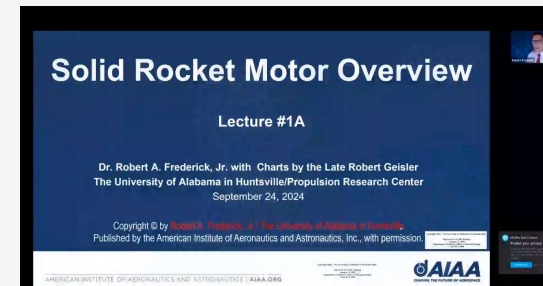
## Advanced Solid Rockets



- Instructed by the AIAA Solid Rockets Technical Committee, consisting of the world's leading experts in solid rocket research and technology.
- All students will receive an AIAA Certificate of Completion at the end of the course

### OVERVIEW

Solid rocket propulsion systems are important for space, launch, tactical, and strategic vehicles. This course presents fundamental themes and advanced concepts related to solid rockets. Both theoretical and practical aspects of the field are covered. Individual presentations include basic principles of solid rocket motor (SRM) processes, broad description of rocket motor and system design principles, internal ballistics modeling, propellant fundamentals, component design (motor case, nozzle, and igniters), component and motor manufacturing, combustion instability, and motor failures.

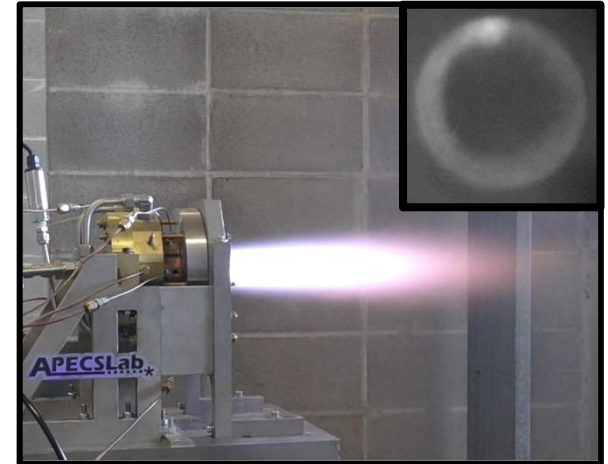




# AIAA HyTASP Webinar on Detonation Propulsion



- **Dr. John Bennewitz** gave an invited presentation as part of the AIAA Hypersonic Technologies & Space Planes (HyTASP) Technical Committee Quarterly attended by over 250 individuals
- Title: Detonation-Based Combustion for High-Speed Propulsion Systems
- Detailed experimental work and accompanying characteristic timescale for the 25 mm rotating detonation rocket engine







# Recognition of Graduates





**Dr. Alexander Bendoyro**

Bay Area, CA



**Dr. Bendoyro intends to publish additional research and to improve the skills he has learned in this program, then use this knowledge for real-world applications.**

"Alex presents his research on fission rover shielding performance at a 2024 aerospace conference in Orlando, FL."

**Committee Chair: Dr. Jason Cassibry**

**Advisor: Dr. Dale Thomas**





# Doctoral Graduate

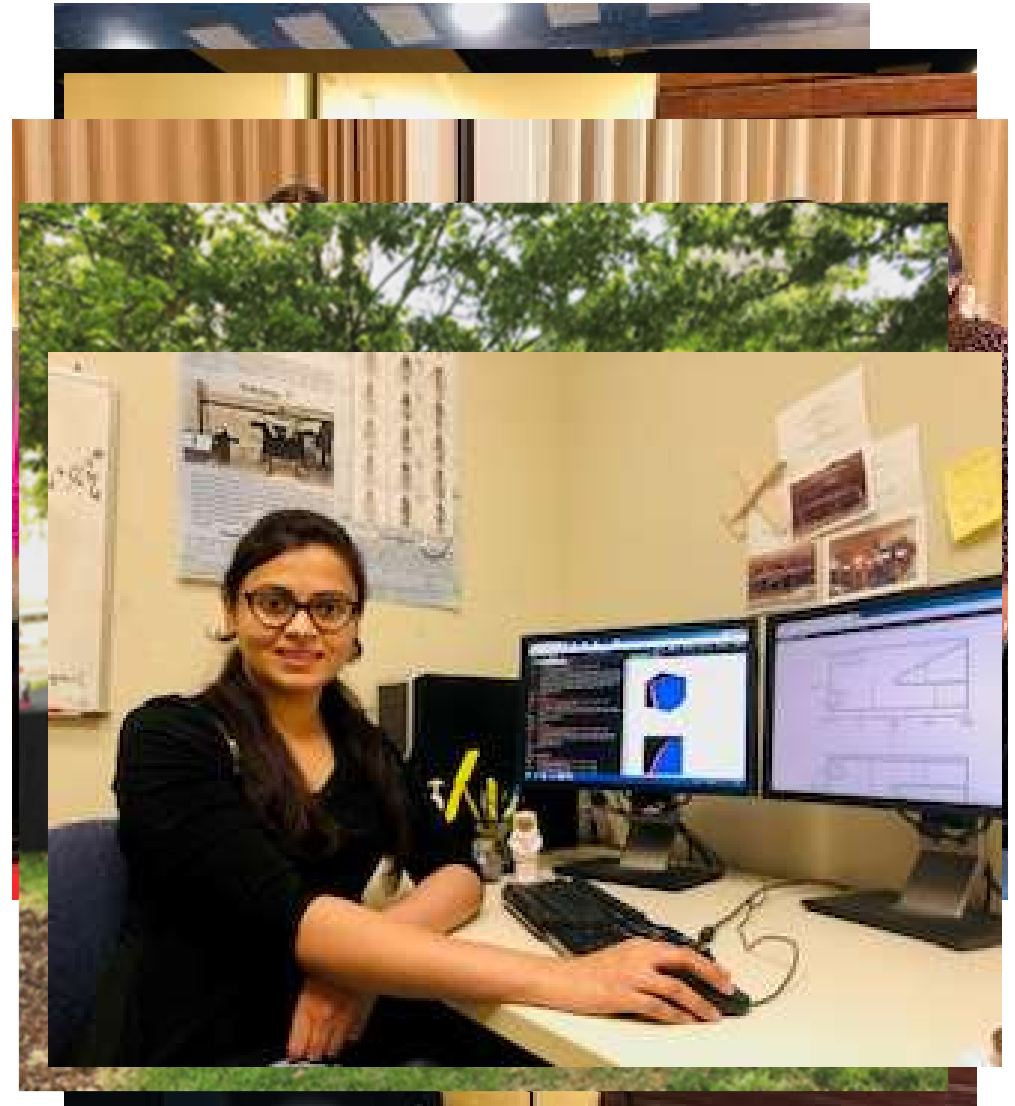


**Dr. Swarnalatha Kathalagiri  
Vasantha Kumar**

*Karnataka, India*

**Dr. Kumar plans to seek opportunities to  
contribute to the Indian space sector.**

**Committee Chair: Dr. Sarma Rani**





## Doctoral Graduate .



**Dr. Brian Dale Taylor**  
*Okawville, IL*

**Brian plans to “continue to pursue the advancement of propulsion technologies for space exploration in his work at NASA.”**

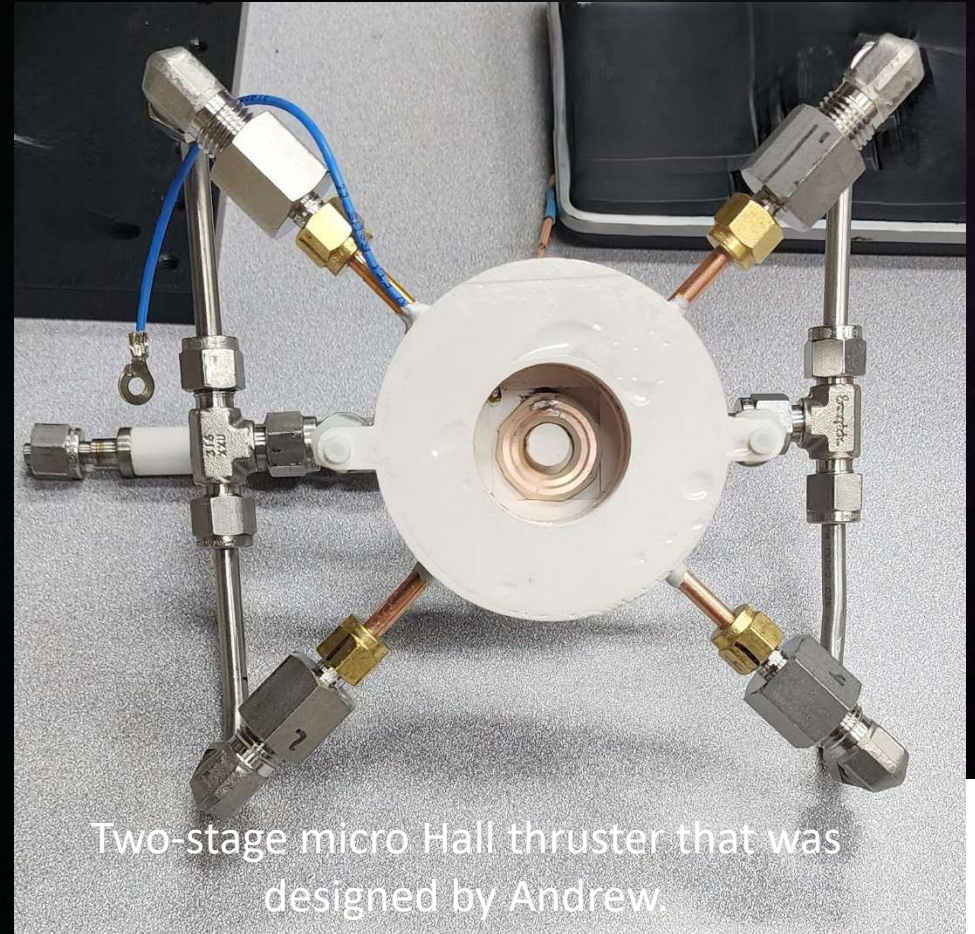
**Committee Chair: Dr. Jason Cassibry**



**Andrew Walsten**  
*Mulvane, KS*

**Dr. Andrew Walsteen has accepted a position with the Research Institute, where he will work with the US Army SMDC on directed energy.**

**Committee Chair: Dr. Gabe Xu**





## Master's Students

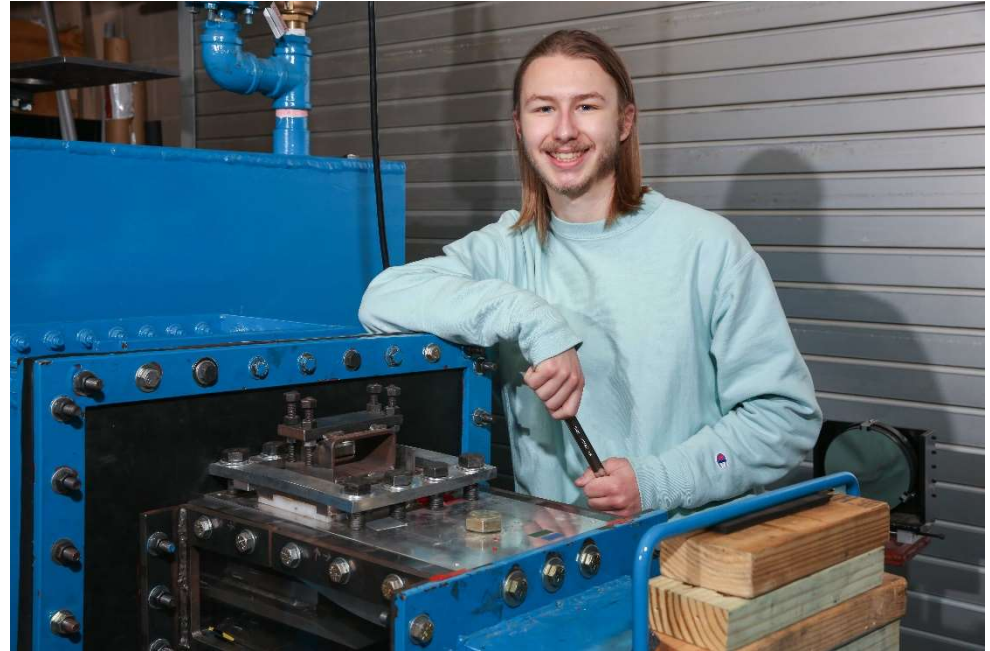


**Grayson Fulmer**

*Montevallo, AL*

**Grayson has been working full-time with the local Huntsville startup Concordia Technologies Inc. while pursuing his Master's. He plans to continue supporting and expanding Concordia's hypersonic analysis and research and development capabilities.**

**Advisor: Dr. Philip Ligrani**



Grayson working on shock-wave holding plate in the UAH Transonic/Supersonic Wind Tunnel Facility





# Master's Students



**Anthony Michael Ciccarelli**  
*Huntsville, AL*

**Anthony Michael has accepted a position at SpaceX as a Dynamics Engineer on the Starship program and is excited to build a career in rocketry and space exploration.**

**Advisor: Dr. Philip Ligrani**





# Master's Students



**Garrett Cobb**

*Pine Island, MN*

**Garrett Cobb is pursuing his PhD at  
UAH with Dr. Bennewitz.**

**Advisor: Dr. Gabe Xu**







# Master's Students



**Chase Herrin**

*Memphis, TN*

Chase is planning to stay in Huntsville and find work.

**Advisor: Dr. Phil Ligrani**

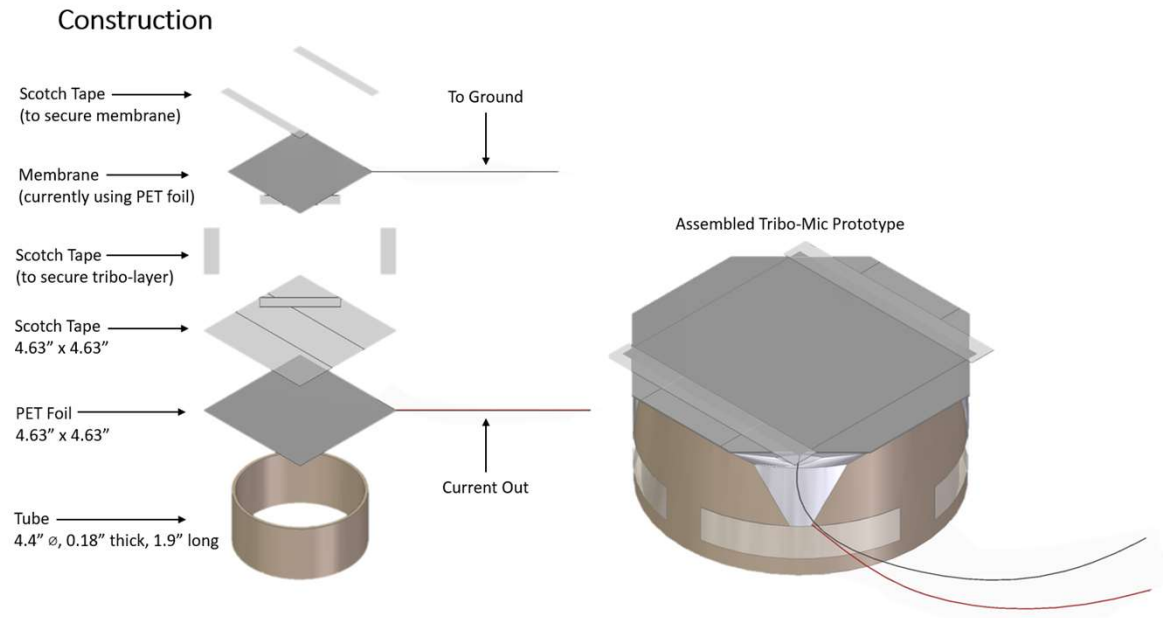


**Safety Team:** Manav C. Dave, Safety Officer, Aerospace Engineering Chase Herrin, Aerospace Engineering Caroline V. Ursprung, Mechanical Engineering





**Dylan Schiff**  
*Huntsville, AL*



Dylan would like to take a lecturing position with the school, as he thinks it would be fun to see this from another perspective.

**Advisor: Dr. Gang Wang**

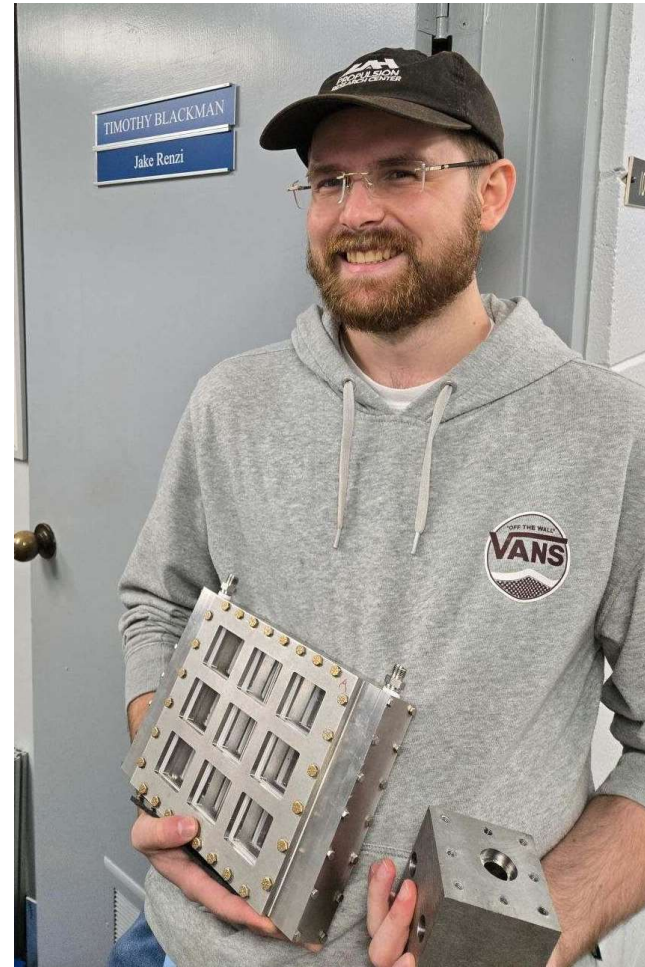


**David Tutunzhiu**

*Raleigh, NC*

David has accepted a full-time position with  
Blue Origin.

**Advisor: Dr. Gabe Xu**



... to all the times I stood in Tim's  
doorway talking to him about parts.



# Bachelors' Degree Graduates

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**Jonathan**  
**"Preston" McMahan**

*Franklin, TN*

Jonathan is planning to move to  
Nashville after he graduates in  
December.

Advisor: Dr. Gabe Xu





**Angelo Panettieri**

*Knoxville, TN*

**Angelo is planning to pursue a Mechanical Engineering Master's Degree at UAH.**

**Advisor: Dr. John Bennewitz**



Angelo suspending a liquid droplet in the APECSLab acoustic levitation setup



# Bachelors' Degree Graduates



## Alex Vaughn

*Fayetteville, TN*

**Alex is planning to return to NASA MSFC's Propulsion Test Division and remain enrolled at UAH to pursue his graduate degrees while establishing his career.**

**Advisor: Dr. Dale Thomas**





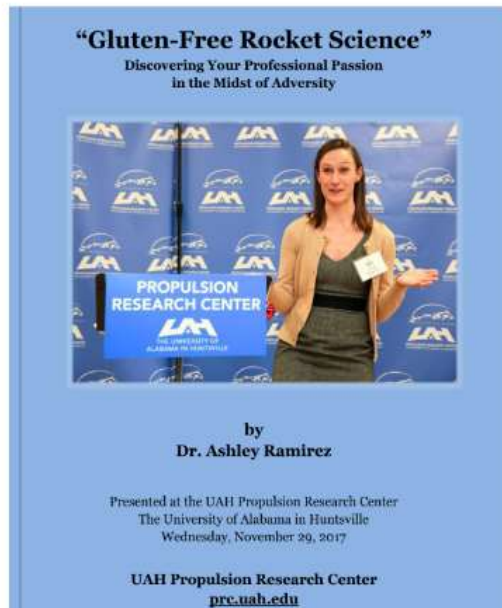
# Mentoring Resources



## Gluten Free Rocket Science

Discovering Your Professional  
Passion in the Midst of Adversity

**Dr. Ashley Ramirez**  
Founder, Mason-Dixon  
Bakery/Bistro



## The Giant Leaps Starts Here

**Dr. John Blevins**  
SLS Chief Engineer  
NASA MSFC



## Facing Unexpected Challenges

**Ambrosia Patterson**  
FBI Change and Transition Program  
Manager



**WID**  
FELLOWS

## 2024 Celebration of Women in Defense



**LAH**  
THE UNIVERSITY OF  
ALABAMA IN HUNTSVILLE

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### BRING IN OTHER PEOPLE

Don't settle for a job that is just kind of in an off-field and because it has a pretty salary. You are not going to be happy in the long run if you are not doing what your heart really wants you to do. Bring in other people and other people's ideas. In life, you have to stand on the shoulders of giants. That's how you reach the top. Now, in our business, I am nothing without my team. My staff is amazing and they are what keeps us going every single day. And if I did not have them, we would not have gotten to where we are right now.

—  
Dr. Ashley Ramirez

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## Dr. Ashley Rameriz

*Owner, Mason Dixon Bakery & Bistro*



**MASON DIXON**  
BAKERY — BISTRO

Mason Dixon Bakery and Bistro was founded by a health-inspired and locally driven entrepreneur, Dr. Ashley Ramirez. After receiving her doctorate in polymer-science chemistry from Duke University, Ashley relocated to Huntsville, Alabama, to accept a position at the Redstone Arsenal in propellant development. Unfortunately, this occurred during sequestration, and her job offer was postponed. This serendipitous delay gave her an idea: a gluten-free bakery. Mason Dixon Bakery, Alabama's first gluten-free bakery, was born. The dream was to create a place where people with food allergies and dietary restrictions could indulge worry free. The bakery soon became a destination to find local scratch made unique baked goods for the family. The Bakery, founded in April of 2013, expanded to include the bistro in January of 2015 and recently celebrated 10 years in business at its newest location on Church Street in downtown Huntsville.



Tennessee Valley  
Chapter

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# Thank You!

