

AEROSPACE ENGINEERING

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NEWSLETTER



MISSISSIPPI STATE UNIVERSITY
JAMES WORTH
BAGLEY
COLLEGE OF ENGINEERING

Spring-1 2023

Future of MSU ASE is **BRIGHT!**

...and here is the Evidence

First, Check Us Out:

[The Most Impactful Aerospace Engineering College](#)

- **ENROLLMENT**

27% increase in ASE undergraduate enrollment since 2016

<https://ir.msstate.edu/>

BS 401

MS 22

PhD 28

- **B.S. DEGREES AWARDED in 2022 = 82**
20% women [national average ~ 16% - *Dept of Ed*]

- **SCHOLARSHIP**

- **ASE Research Expenditures – 23rd** (NSF HERD FY21)
- **ASE Faculty and Students are Investigating**
Autonomous systems; Hypersonics; Urban Air Mobility;
Advanced Manufacturing & Materials
- **STRONG faculty and student partnerships with**
Raspet Flight Research Lab, Center for Advanced Vehicular
Systems, and Advanced Composites Institute

- **DEPARTMENT**

- **Award-winning Student Design Teams:**
Space Cowboys – Xipiter - CubeSat
- **Student Organizations:** AIAA & Women of Aerospace
- **4 new faculty joined since Aug 2021; 3 more to hire!**
- **MSU ASE continuously accredited since 1 Oct 1949**
BCoE undergraduate programs are preparing for the 2023
ABET Review. Final report due July 2023.
Onsite visit fall 2023.



Upcoming Events

Spring Career Fair
9-10 February, The Mill

Academic Insight
17-18 February

Scholarship Apps Due
1 March

Advisory Board Meeting
3 March

Spring Break
13-17 March

Hail State
Go Dawgs!

ASE EVENTS / NOTABLES



NASA Astronaut, Jerry Ross relates his experiences as an astronaut. Ross was the Chief Astronaut of the NASA Engineering and Safety Center, has more than 1,393 hours in space - including nine spacewalks - and was the first human to be launched into space seven times.



Britain Steele (L) receives the [Astronaut Scholarship Award](#) (for the 2nd time!) from **Astronaut Jerry Ross**. Britain is interning at Virgin Galactic.



Mr. Ray Dillon, Former President and CEO at Deltic Timber Corporation, delivering a professional development seminar to Rob Wolz's senior ASE lab class.



Quinlan Kurtycz, senior ASE student receives the prestigious [Harry Charles F. Simrall Award for Engineering Excellence](#).



UIR Visits ASE, L-R, A. Chriat, M. Ouhabi, A. Drissi, E. Essadiqi, UIR Eng. Dean; S. Yassir, Mustapha Faqir, UIR SAAE Academic Director, Rania Bassou, Randa Bassou.



Kevin Walker from QinetiQ Australia gives a seminar entitled "Overview of the ERSI Working Group."

VIRTUAL OUTREACH



Mallory Mott, Quin Kurtycz, and Rani Sullivan conduct a virtual outreach session on things aerospace for Ms. Embry's 5th grade class at Oconee County Schools in GA.

Photo credit: Anisa Sullivan Jimenez



WELCOME BACK EVENT FALL 2022



Above: Paper airplane contest after pizza party.

Right: Winners Jakob Black and Tucker Jaudon with Davy Belk, sponsor of the contest.



Get Involved!

- **AIAA**- American Institute of Aeronautics and Astronautics (Pres. Joseph Mays; Advisor R. Wolz)
- **Space Cowboys**- Nationally competitive rocketry team (Pres. Quin Kurtycz; Advisor R. Wolz & S. Narsipur)
- **Team Xipiter**- UAS integrated products design team (Team Lead: Kyle Lindsey; Advisor C. Walker)
- **CubeSat MSU**- Study and design of miniaturized satellites (Pres. Bentley Hillis; Advisor Y. Cheng & C. Sun)

ASE FACULTY AND STAFF SPOTLIGHTS

CONGRATULATIONS



**Rani W. Sullivan,
Ph.D.**

Named [Head of the Department of Aerospace Engineering](#), effective 1 July 2022.



**Adrian Sescu,
Ph.D.**

Named holder of the [Airbus Helicopters Endowed Professorship in Aerospace Engineering](#).

WELCOME



Seokwon (Alex) Cho, Ph.D. joined ASE as an assistant professor in Jan 2023. Dr. Cho finished his PhD in mechanical and aerospace engineering from Seoul National University in 2018. His research interests include heat-flux and thermal testing, fuel kinetics and combustion, low-carbon intensive propulsion systems, optical diagnostics, and 3D flow and combustion simulations (RANS and LES). Having postdoctoral appointments with the Combustion Research Facility at Sandia National Laboratories and as a postdoctoral associate and lecturer at the University of Minnesota–Twin Cities, he worked on the effect of catalytic modification of natural gas on combustion. He is a member of AIAA and SAE.



Brandon Warner joined ASE in 2022 as the ASE Laboratory Operations Engineer. Brandon is a two-time MSU graduate (2014 B.S. ME; 2016 M.S. ME). He was a senior design engineer at the Advanced Composites Institute and he brings his knowledge and experience in the area of manufacturing, fabrication, and testing of polymer composite materials and structures. He is using his extensive knowledge and experience in laboratory methods, including CNC machining and mechanical and electrical systems, to oversee and coordinate laboratory operations and equipment necessary to support ASE educational lab activities and research projects.

ASE ALUMNI– How about them DAWGS!

INVOLVED IN LITERALLY OUT-OF-THIS-WORLD, TRANSFORMATIVE TECHNOLOGIES



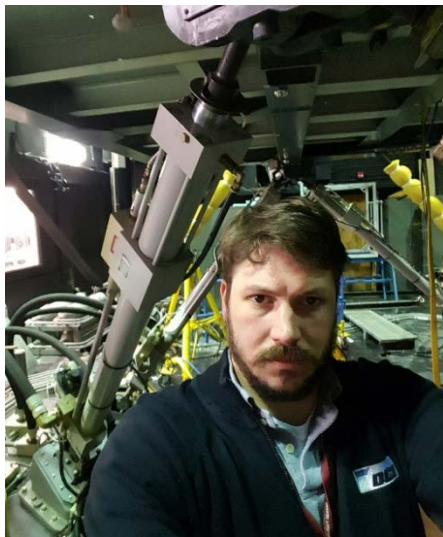
Chris Cotting (B.S. 1995; M.S. 1997)

Director of Research at the USAF Test Pilot School. Chris and his team did the design for new research systems, enabling “never been done before” Artificial Intelligence flight testing.

[\[Inside the special F-16 the Air Force is using to test out AI - Breaking Defense, January 2023.\]](#)



Artemis 1 Launch (11/16/22) photo taken by Emerson Oliver as he watched the SLS in front of the historic Saturn V launch.



Emerson Oliver (B.S. 2005; M.S. 2013)

Founder & CEO, EOLLC- specializes in GNC design for launch vehicles, landers, and spacecraft. GN & C Lead for the NASA Human Landing System under Artemis.

Left photo: Emerson in the MSFC Contact Dynamics Simulation Lab



Joey Brown (B.S. 2016)

2022 Graduate of the U.S. Air Force Test Pilot School.



Carolyn D. Woeber

Received the 2022 AIAA Inlets Nozzles and Propulsion System Integration Best Paper award with co-authors.

Jennifer Crutcher Franzo (B.S. 2007)

Headed the safety of the entire Artemis core stage - awarded the prestigious Outstanding Leadership Medal from NASA!

Keep us informed

We are interested in hearing about your projects, accomplishments, and advancements. Please send noteworthy items to sullivan@ae.msstate.edu

Give to ASE

Your gift greatly benefits the ASE Department. Please visit our webpage at <https://www.ae.msstate.edu/> and select [GIVING TO ASE](#). Like us on Facebook @MSUAerospaceEngineering

SciTech 2023

National Harbor, MD 23-27 January 2023



A Mini-Reunion

CW: David Bridges, Ryan Bond, Jacob Rogers, Daniel Drake, Ian Dettwiller, Thea Henslee, Rani Sullivan, Carolyn Woeber, Radwa Alaziz, Shuvam Saha

4 MSU Papers

1. Alaziz R, Saha S, Sullivan R Influence of Graphene Nanoplatelets on the Tensile Response of Stitched Composites with Thin Plies. AIAA-2023-0958
2. Ouhabi M, Narsipur S, Kim J. Off-Board Aerodynamic Measurements of Small-UAVs in Glide and Powered Flight Using Motion Tracking. AIAA-2023-0813
3. Saha S, Sullivan R. Gas Permeability and Flexural Strength Post Impact of Cryogenically Cycled Composites. AIAA-2023-1902
4. Zope A, Collins E, Burgreen G, Bhushan S, Luke E, Dettwiller I. Towards More Efficient Fluid-Thermal Interaction Analysis for Hypersonic Trajectory Flights. AIAA-2023-1039



R. Sullivan and C. Cotting

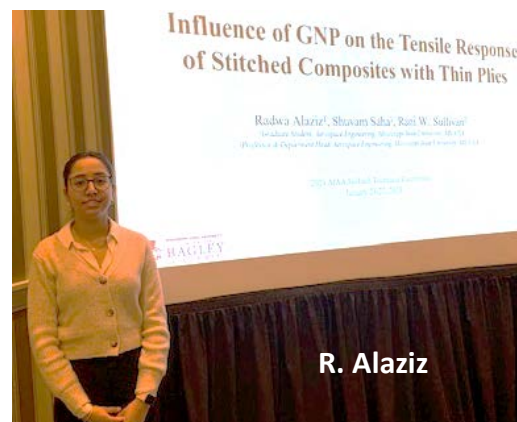
Presentations



S. Saha



M. Ouhabi



R. Alaziz