

Building Space



2022-2023 ANNUAL REPORT



Georgia Tech College of Engineering
Daniel Guggenheim School
of Aerospace Engineering



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Daniel Guggenheim School of Aerospace Engineering

Dear Students, Faculty, and Staff,

The time has come for me to bid farewell as the William R. T. Oakes Professor & AE School Chair. It has been an incredible journey filled with hard work, collaboration, and innovation. The concept of **"building space"** extends beyond the literal construction of aircraft, spacecraft, or brick-and-mortar structures. It encompasses the boundless potential within each one of us to build a future where the possibilities are limitless.

When I first assumed this position, I envisioned a community united by a common passion for aerospace, learning, pushing boundaries, and building the next generation of leaders.

Over the past five years, we have risen to be the **No. 1 undergraduate aerospace engineering program in the nation**, according to the 2023 *U.S. News & World Report*, grown student enrollment by 22%, and expanded research expenditures to \$40 million annually. We also advocated for and developed a plan to build new facilities to take the School into the future. These achievements are a testament to the unwavering dedication of our exceptional faculty, students' brilliance and hard work, and our staff's unwavering support.

One of the most critical investments I have made over the years has been in people. Acquiring new faculty has been central to our mission. Our faculty are innovators in the field and have made contributions that have played a pivotal role in shaping the future of engineering.

Thanks to the hard work of faculty, students, and staff we established the AE School Diversity Equity and Inclusion Council to help foster an environment that celebrates diversity and implements positive transformation.

This year, in addition to welcoming new faculty, we have cultivated and promoted faculty from within, recognizing excellence. Professor **Adam Steinberg** was selected to spearhead the graduate programs, while Professor **Joseph Oefelein** was appointed to oversee the undergraduate program in their roles as associate chairs.

During my monthly Open Office Hour with the AE Chair sessions, I learned so much about our students and enjoyed hearing about their challenges and achievements. I was always filled with pride when I learned of their triumphs. On an annual basis, our students have won awards like the Brooke Owens, Patti Grace, and Matthew Isakowitz Fellowships just to name a few.

I was honored to support students as they created new student-based organizations like Georgia Tech's **Women of Aeronautics and Astronautics** and **AeroAfroAstro** because I know that community is so important for students' well-being. I was also impressed with the numerous events our student organizations hosted to champion one another. Student organizations like the **Yellow Jacket Space Program** launched Georgia Tech's largest liquid-fueled rocket, and the Georgia Tech Chapter of the **Vertical Flight Society** received \$28,000 in scholarships just last semester.

I have witnessed our students explore the realms of space first-hand as mission control for the Lunar Flashlight spacecraft as it traveled toward the moon in search of frozen water. Professor **Glenn Lightsey** and his team operated a months-long mission with NASA around the clock, from launch to mission completion from the Space Systems Design Lab.

Together, we have built an environment of exploration, nurturing the future generation of explorers, researchers, and innovators. I leave with the utmost confidence that you will continue to build the program in ways yet unimagined. As I pass the torch, I do not doubt you will carry it forward with focused curiosity and dedication. I look forward to witnessing the incredible heights you will reach and the discoveries you will make as you continue to build.

Thank you for including me in this grand adventure at Georgia Tech.



Mark F. Costello

Mark F. Costello
William R. T. Oakes Professor & School Chair
Daniel Guggenheim School of Aerospace Engineering

AIAA Recognizes Paper on Clean Combustion and Renewable Fuels Among 2022's Best

Georgia Tech researchers working to understand a combustion phenomenon called blowoff have produced one the year's best papers in liquid propulsion and propellant combustion, according to the American Institute of Aeronautics and Astronautics (AIAA).

"This research is important because it works towards a cleaner, more sustainable future," said **Benjamin Emerson**, co-author and a senior research engineer in the Daniel Guggenheim School of Aerospace Engineering. "It is an application area where I can take great pride, and this award is encouragement and validation that we are working in an important research area."

The researchers, working in the Ben T. Zinn Combustion Lab, received a 2022 Best Paper award from AIAA for their study, 'Simultaneous OH, CH₂O and flow field imaging of near blowoff dynamics'. Along with Emerson, the paper was authored by researchers **Raghul Kumar**, **Subodh Adhikari**, and Professor **Timothy Lieuwen** from Georgia Tech, along with **Christopher Fugger** from Special Energies, LLC.

The Zinn Combustion Lab focuses on clean combustion by making renewable fuels reliable and efficient for the systems that use them. The award-winning paper examined blowoff, where the flame is extinguished from the combustor. Blowoff poses a significant safety risk for introducing alternate fuels into aircraft engines, because it removes the airplane's source of thrust.

"The paper applies cutting-edge laser-based diagnostics to uncover new insight into the blowoff phenomenon, and we accomplished this by partnering with other experts in combustion diagnostics," Emerson said. "Going forward, our improved understanding of blowout can aid in the certification and deployment of alternative fuels."

Lieuwen, Regents' Professor and David S. Lewis, Jr. Chair, also participated in the study.

"Georgia Tech is the greatest thing that ever happened to me, and one of the world's leading colleges in clean energy," said Lieuwen, who also directs the Strategic Energy Institute at Tech. "I enjoy working on important problems that deal with clean combustion and alternative fuels, plus I get to work with people like Ben [Emerson] who are huge assets to the College of Engineering."

As best paper award winners, the authors attended the Liquid Propulsion Technical Committee meeting at SciTech 2023, the world's largest forum for aerospace research and development. The paper also will be recognized in the November 2023 issue of Aerospace America and on the AIAA and SciTech websites.



Prof. Tim Lieuwen

CubeSat on Artemis I Uses Georgia Tech Propulsion System

All eyes were on the sky as NASA's Artemis I mission launched from the Kennedy Space Center in Florida. Georgia Tech David Lewis Professor of Space Systems Technology, **Glenn Lightsey**, and his team developed the propulsion system for the small satellite BioSentinel that was onboard the Space Launch System (SLS) megarocket.

Artemis I was the first in a series of NASA missions that aims to return humans to the moon, including the first woman and person of color. It was also the first integrated test of NASA's deep space exploration systems including the Orion spacecraft. During the 42-day mission, the Orion spacecraft traveled around the moon and earth in a figure eight route, on a free return trajectory to earth. During the mission, Orion deployed ten CubeSats, each with their own specific mission.

AE alumnus **Terry Stevenson** (PhDAE'18) and **Matt Sorgenfrei**, both aerospace engineers at NASA Ames Research Center, worked with Lightsey to develop the propulsion system for BioSentinel. The 6U CubeSat carried two strains of yeast to understand the impact of deep space radiation on living organisms. It is the same yeast used in bread and beer. One strain of the yeast is commonly found in nature and the other has trouble repairing DNA. "It's about survival in space and radiation damage, specifically DNA strand breaks. We don't know how organisms will be affected by deep space radiation beyond the earth's orbit," Lightsey said.

According to NASA, BioSentinel is the first long duration biology experiment to take place beyond where the space station orbits near earth. When the satellite is past earth's protective magnetic field, scientists will begin experiments remotely, activating two strains of the yeast at different points in time during the mission. Miniature propulsion systems allow these small satellites to accomplish their missions.

Since BioSentinel's propulsion system makes the spacecraft maneuverable, they used it to point the antenna to earth where researchers communicate with the satellite and collect data which will be transmitted back to earth.

In 2013, a couple of undergrad students working with Lightsey at the University of Texas approached him about making a maneuverable propulsion system. "If it isn't maneuverable, you're basically launching an inert box into space, and once it gets into orbit, it's going to drift around like a piece of space debris, and

you don't have any control over it. So, we needed a smaller propulsion system that would make the spacecraft maneuverable, about the size of a brick. No one had built a thruster that small before," Lightsey explained.

Lightsey's team decided they needed to 3D print the tank and the structure of the propulsion system because additive manufacturing enables you to create complex shapes that you wouldn't be able to manufacture using other methods. "The propulsion system is made of a material called Accura Bluestone, an additively manufactured ceramic-like resin that can be 3D-printed in a wide range of shapes and sizes. The material is space-rated, meaning that it will work in the harsh environment-temperature and vacuum-of space," Lightsey added.

NASA was aware that Lightsey was researching additively manufactured propulsion systems for small spacecraft and in 2015 they approached him and his team about building the propulsion system for BioSentinel. After it was delivered to NASA in 2017, the propulsion system went through a series of stringent and lengthy tests at the Glenn Research Center in Ohio and was given the green light for flight.

The work on BioSentinel's propulsion system led to Georgia Tech Space Systems Design Laboratory's work on the Lunar Flashlight Propulsion System.



Prof. Glenn Lightsey

Aerospace Systems Design Laboratory Awarded NASA Early Stage Innovation Grant

NASA awarded ten U.S. universities including the Georgia Institute of Technology to bolster new technology research. This round of Early Stage Innovation (ESI) awards supports universities in developing technology for future space exploration. The selected projects will advance technologies in areas including nuclear propulsion, space communications, atmospheric entry, advanced materials, and high-temperature radiators.

The Georgia Tech School of Aerospace Engineering's Aerospace Systems Design Laboratory (ASDL) received an award for the proposal, *A Reduced Order Modeling Approach to the Dynamic Stability Analysis of Blunt-Body Entry Vehicles*. The research will use recent progress in machine learning and reduced order modeling methods to create more accurate simulations of blunt-body atmospheric entry.

The principal investigator for the project is Regents Professor **Dimitri Mavris**, director of ASDL. The research effort will be supported by Research Engineer **Bradford Robertson** and ASDL graduate students.

"We are excited about this grant from NASA," said Mavris. "This research allows ASDL to build upon our experience in surrogate modeling techniques to solve one of the most challenging problems in aerospace sciences."

This multidisciplinary research combines two areas that ASDL has specialized in: surrogate modeling and computational fluid dynamics (CFD) in-the-loop flight simulation. The POST2/FUN3D simulated environment developed at ASDL will be used to mimic blunt-body entry vehicles in free flight. These high-fidelity CFD simulations are needed to simulate the unsteady aerodynamic behavior of a blunt-body's recirculating wake which drives the vehicle's dynamic stability. These expensive simulations will take advantage of Nvidia Graphics Processing Unit (GPU) compute nodes hosted at Georgia Tech's Partnership for Advanced Computing Environment (PACE).

The data from these simulations will be used to construct next-generation surrogate models which can reproduce the vehicle's surface pressure and shear force distributions as a function of vehicle state; these surrogates will enable a significant advance in the state-of-the-art over existing data reduction techniques. It is hoped that these CFD-in-the-loop simulations and surrogate models will augment physical tests as part of future entry vehicle development programs.

ASDL was awarded \$650,000 in grants from NASA's Space Technology Research Grants over three years to develop these techniques towards future use. The Space Technology Research Grants program is funded by NASA's Space Technology Mission Directorate, which supports and develops transformative space technologies to enable future missions.



Prof. Dimitri Mavris

Georgia Tech Named an Academic Engagement Enterprise Member by U.S. Space Command

The United States Space Command (USSpaceCom) has named Georgia Tech an Academic Engagement Enterprise (AEE) member. AE School professors **John Christian** and **Koki Ho** will serve as Georgia Tech points of contact for the new initiative. AEE is a cooperative pilot program that promotes collaboration between USSpaceCom and institutions of higher learning across the country.

"This is a great opportunity to connect the fundamental research done at Georgia Tech with national security challenges in the space domain and give students the exposure to understand and contribute to the needs of the U.S. Space Command," said Ho.

The program's intent is to enhance the relationship between space and academic enterprises by focusing on its strategic goals of growing future workplace development, increasing space-applied research, improving access to space studies, and facilitating a more globally-diverse dialogue about space.

"It's exciting to see the US Space Command engaging with the academic community in this way," said Christian. "We look

forward to exploring how the entire Georgia Tech community can help solve some of the challenging problems in the space domain while also preparing our students for future careers in the space sector."

USSpaceCom aims to inspire diverse groups of students to pursue space education, research, and careers throughout the space enterprise.

"USSpaceCom will consistently recruit and hire the most qualified personnel to fill our ranks and ensure mission success in the execution of our national strategic and defense strategy responsibilities," said U.S. Space Force Col. Douglas Drake, USSpaceCom training and education division chief.



Prof. Koki Ho

Building Space, With Your Help

Preparing future leaders in aerospace engineering is a crucial mission of the Daniel Guggenheim School of Aerospace Engineering. The School stands on a firm foundation that is ready to expand to meet the needs of the field. The Georgia Institute of Technology has a dedicated team of faculty, students, researchers, and alumni pushing the boundaries in innovation and creativity.

Our robust academic curriculum and award-winning tradition of excellence in research provide fertile ground for growth. Our supporters have a unique opportunity to join us as we take our aerospace engineering program to the next level. Our success will be determined by our ability to secure the financial resources necessary to build **state-of-the-art facilities, promote education, collaboration & research, and prepare the next generation of aerospace engineers.**

Your support will help us to expand our reach and continue our legacy of success. Our success will be determined by our ability to secure the financial resources necessary to build state-of-the-art facilities that will promote education, collaboration, and research.



Read the full AE School Case Statement:
ae.gatech.edu/brochures

Georgia Tech Brings Engineering and Robotics to Life at Therrell High School



Georgia Tech, Lens.Vegas, and the United Parcel Service Inc. (UPS) teamed up at Therrell High School to give seniors a unique opportunity to explore the engineering field through engaging and interactive drone and robotic demonstrations. Presentations hosted by Tech students, faculty, and alumni provided a hands-on experience and insight into the various aspects of engineering.

Tech students **Ian Boraks** (CMPE), **Dylan Wyckoff** (CS), **Andy Kapperman** (AE), **Guru Ganesh** (AE), and **Simeon Salia** (AE) served as the drone exhibit volunteers. **Mitchell Walker**, associate dean for academics, **Youngjun Choi**, director of advanced AI and robotics at UPS Advanced Technology Group, and **Tiffany Tesfamichael**, director of Drone Experience Team and head of Learning at Lens.Vegas came out to support the collaboration.

Students learned of the various components of drones, including the flight controller, motors, propellers, and cameras. Additionally, they discovered how these components worked together to enable flight and perform specific tasks.

Volunteers provided practical insights into the real-world applications of drones across different industries, including the diverse fields where drones are used, such as aerial photography and videography, surveying and mapping, search and rescue operations, and delivery services.

Space Day Atlanta Fueling the STEM Pipeline

During World Space Week, local K-12 students interested in science, technology, engineering, and mathematics (STEM) came in droves to experience Space Day Atlanta at the Atlanta University Center, held this year at partner Atlanta University Center's Woodruff Library. The free annual event provides STEM access to children of all backgrounds in a fun and interactive atmosphere.

Organizers **John Hines**, Hines Family Foundation; **Justin Ballenger**, Morehouse College and Atlanta University Center Data Science Initiative; **Bettina Gardner** and **Eboni Dotson**, Atlanta University Center Data Science Initiative; **Lori Skillings**, Georgia Space Grant Consortium (GSGC); and **Simeon Salia**, **Madhukarthik "Karthik" Mohanalingam**, Georgia Tech School of Aerospace Engineering (AE) had the event running like a well-oiled machine.

More than 65 Georgia Tech students volunteered their time and talent during the event to reach the next generation. "The School of AE and GSGC were proud to be on the team that made Space Day Atlanta a success. This is consistent with our commitment to conduct K-12 outreach to support the need for diverse STEM talent. The fact that over 65 Georgia Tech students served as volunteers means the GT motto of 'progress and service' is flourishing," said **Stephen Ruffin**, associate dean for academic affairs, Georgia Tech Professional Education and director of the Georgia Space Grant Consortium.

This year's event featured a presentation from retired NASA astronaut **Yvonne Cagle**, who spoke to attendees about the upcoming Artemis missions and their ties to the Apollo missions. She also explained what it takes to be an astronaut and gave the attendees an encouraging message.

Georgia Tech students served at hands-on booths bringing their science and engineering knowledge and most importantly an eagerness to teach budding young minds. They also worked the registration tables handing out raffle tickets, balloons, and NASA goodie bags, as well as setup and breakdown. Many of the booths were interactive and demonstrated everything from making spacecraft orbiters to understanding how black holes and gravity work in space. Participants asked questions and interacted with volunteers.

The balloon rocket booth was a hit with the K-12 crowd because they could stomp a bag to send small foam rockets into the air. Some rockets traveled as high as ten feet. **Manas Mantha**, **Mohanalingam**, and **Zain Pastula** helped attendees blast their rockets off into the air with a powerful punch. Participants used chopsticks, metallic ribbon, and aluminum foil to make their own comets with the help of Daamini

Attendees couldn't miss the gigantic textured moon map on the ground in front of the library, by the Aldrin Foundation. **Ethan**

Sirak and Miguel Daly assisted attendees to operate a small land rover (designed and built during AE's summer STEP high school camp) on the map's surface. Parent **Alicia Johnson** explained why she brought her daughters. "For them to learn about space and get insight into different aspects of science and NASA is important.

I also wanted them to have exposure to exploring space."

Tied to the space and sustainability theme, Mercer University, College of Education and STEM Education Innovation Lab, and the Hines Family Foundation volunteers showcased a hydroponics water system to show how astronauts grow fresh fruits and vegetables in space. Attendees even walked away with a kit to grow their own vegetables.

Attendees also met with NASA AMES engineers and learned about their collaborative research (along with students from Georgia Tech, the University of Maryland, and San Jose State) in developing a networked communication system for space to share data using CubeSats.

Event sponsors included: GSGC (a NASA Office of STEM Engagement program), Hines Family Foundation, Atlanta University Center Data Science Initiative, Morehouse College, Mercer University, Subsume Studios, Ignited Thinkers, and Simulorr. Vaisalaaksi, while **Harry Shrager** explained what a comet was and the difference between a comet and an asteroid.

For participants curious about the moon, the crater booth offered the touch and feel of the moon's surface using flour and water. **Bella Giordano**, **Jalen Cauley**, and **Deshawn Johnson** encouraged participants to put their hands in the bowls of flour while they explained how the moon's surface differed from the earth's surface.

Cody Deacons, **Tyler White**, and **Griffen Jourdan** from the Ramblin' Rocket Club's Experimental Rocketry (GTXR) team offered attendees a look at real rockets. They shared how the club makes rockets and about their recent trip to the Mojave Desert in California where they launched them into the sky.



FACULTY HIGHLIGHTS

• Professor **Adam Steinberg** was selected as the AE School's new associate chair for graduate programs. He manages the graduate program, expands advisement, reviews the curriculum, and recruits top talent. He was also elected a Fellow of the Combustion Institute for his outstanding contributions to combustion. • Professor **Joseph Oefelein** was selected as the associate chair for undergraduate programs in the AE School. In his role, he manages advisement and supports undergraduate initiatives.

• Professor **George Kardomateas** was chosen for the 2022 Spirit of St. Louis Medal by the American Society of Mechanical Engineers for his exemplary work in the progress of aeronautics and astronautics.

• Professor **Suresh Menon** was awarded the 2023 American Institute of Aeronautics and Astronautics (AIAA) Propellants & Combustion Award for his outstanding contributions to aeronautical combustion engineering. • Professor **Timothy Lieuwen** and Sr. Research Engineer **Benjamin Emerson** were among those who received the 2022 Best Paper award from AIAA for their paper, *Simultaneous OH, CH₂O And Flow Field Imaging of Near Blowoff Dynamics*. • **Vishal Acharya, Graeme Kennedy, and Juergen Rauleder** were elected to the 2023 Class of Associate Fellows by AIAA • **Mitchell L.R. Walker II**, professor and John W. Young Chair, was named a Fellow of AIAA. He is the 15th Tech faculty member elevated to this top-tier distinction. • **Dimitri Mavris** was named the president of the International Council of the Aeronautical Sciences (ICAS). He will serve a two-year term and work to carry out the ICAS mission. • Professor **Yongxin Chen** and team won the Society for Industrial and Applied Mathematics best paper award for the paper, *Multimarginal Optimal Transport with a Tree-Structured Cost and the Schrodinger Bridge Problem*. • Professor **Stephen Ruffin** was selected as the associate dean for academic affairs for Georgia Tech Professional Education. • Professor **Wenting Sun** was selected for the Hiroshi Tsuji Early Career Research Award by the Combustion Institute and Elsevier. The award is bestowed to early career researchers who have demonstrated excellence in fundamental or applied combustion science and made progress in their field. • Professor **John Christian** was among the authors nominated for the 2023 Canopus Award for Excellence in Interstellar Writing in the category of published short-form non-fiction for his work, *Navigation and Star Identification for an Interstellar Mission*.

• Professor **Marilyn Smith** was selected to deliver the Royal Aeronautical Society's (RAeS) 2023 Lanchester Lecture.



Prof. Adam Steinberg



Prof. George Kardomateas



Prof. Graeme Kennedy



Prof. Stephen Ruffin



Prof. Marilyn Smith

• Professor **Kelly Griending** was awarded an Undergraduate Sustainability Education Innovation grant through the Georgia Tech Office of Sustainability. The grant will go towards updates in the AE School curriculum. She also received the Most Valuable Professor award by Georgia Tech's Sigma Gamma Tau • Professors **Glenn Lightsey, Brian Gunter, Christopher Carr, and AE Research Engineer Sterling Peet** were honored with the Outstanding Achievement in Research Program Development award from the 2023 Institute Research Awards. The group's work included launching eight space missions, including Lunar Flashlight, Prox-1, BioSentinel, TARGIT, and GT-1. • Professor **P.K. Yeung** received one of the U.S. Department of Energy's 2023 INCITE Award for his proposal to investigate the fundamental problems of turbulence, using Frontier.



Prof. Kelly Griending



Prof. P.K. Yeung

NEW FACULTY

Christos Athanasiou is an assistant professor at AE School, leading the Daedalus Lab. The lab's mission is to advance science and technology in biological and man-made systems for tackling grand social and environmental challenges with a major focus on energy storage, environmental remediation, and sustainable space exploration. He holds a Ph.D. in Photonics from École Polytechnique Fédérale de Lausanne.



Prof. Christos E. Athanasiou

Álvaro Romero-Calvo is an assistant professor in at the AE School. His research explores the use of electromagnetic actuation mechanisms to control multiphase flows in microgravity and partial gravity. He approaches the study of low-gravity fluid mechanics from an analytical, numerical, and experimental perspective with the goal of developing next-generation spacecraft fluid management technologies. Applications span from life support to in-space propulsion and include phase separation, cryogenics storage and transfer, propellant slosh damping, SmallSat propellant management, boiling and condensation, water electrolysis, and carbon dioxide reduction, among others.



Prof. Álvaro Romero-Calvo

Sedina Tsikata joined the AE School as an associate professor in January 2023. Her research interests include the fundamental nature and applications of magnetized plasmas, with a focus on the development of advanced diagnostics, analysis methods, control, and new plasma devices. Her research has been applied to the study of instabilities and electron features in Hall plasma thrusters for space propulsion and in other magnetized plasma environments relevant to materials processing and accelerator physics. Prior to joining Georgia Tech she was a researcher with the National Center for Scientific Research.



Prof. Sedina Tsikata

STUDENT HIGHLIGHTS

- **Jesudunsin Awodele, Emily Herrmann, Joshua Ingersoll, and Margaret Kilpatrick** were named to the 2023 Aviation Week Network's 20 Twenties.
- **Hari Priya** received the Charles P. Fenimore Best Student Presentation Award from the Eastern States Section of the Combustion Institute.
- Jack Kent Cooke Foundation selected **Papa Quainoo** for the Undergraduate Transfer Scholarship, which allowed him to pursue his dream and attend AE.
- Team OPOSSUM (Open Platform for Orbital Space Servicing and Uplink near the Moon) won the best overall aerospace engineering project at Georgia Tech's Fall 2022 Capstone Design Expo. The team members include: **Jose Andrade, William Boynton, Carson Coursey, Jacob Evans, Crispin Gambill, Gavin Garland, Simon Pahlsmeyer, Jason Smith, Maggie Stewart, and Katie Wyers.**
- The Yellow Jacket Space Program (YJSP) launched their subscale liquid-fueled rocket in the Mojave Desert. It was the biggest rocket ever created by Georgia Tech students.
- **Taylor Hampson, Grace Krahn, and José Morel** were named to the Class of 2023 Matthew Isakowitz Fellowship.
- **Althea Noonan, Ishani Peddi, and Samina Patel** named 2023 Brooke Owens Fellows.
- Black in Astro, a national group co-led by AE Ph.D. student, **Naia Butler-Craig** received the 2023 Annie Maunders Medal from the Royal Astronomical Society for its service to the Black community in astronomy and other space-related fields.
- Design Build Fly (DBF) team members **Michael Francesconi, Vedant Ruia, Cayetana Salinas, David Shaji, Salil Sodhi, Ryan Wijaya, and pilot Gowtham Venkatachalam** won first place in the Micro Class at Society of Automotive Engineers (SAE) Aero Design East Competition.
- **Tilahta Agbere, Grant Ewing, Yubo Fu, Max Kramer, Albert Lee, Ishan Padmani, Ira Rosner, Malia Trask, Ryan Warner, and pilot Gowtham Venkatachalam** from the DBF Team won first place in the Advanced Class at the SAE Aero Design East Competition.
- Graduating senior **Catherine Schlabach** was among the speakers at the Spring 2023 bachelor's Commencement ceremony.
- Team TRTL (Taxi Rendez-Vous, Transit, Launcher) won the best aerospace engineering project at the Spring 2023 Capstone Design Expo. Team members included: **George Blackwell, Jurist Chan, Sparsh Desai, James Farmer, Reid Fly, Aaron Hammond, Pessi Laensirinne, Eleanor Smith, Lonnie Webb, and team faculty advisor Álvaro Romero-Calvo.**
- Georgia Tech team LOTUS (L1 Orbiting Tracking and Uplink Spacecraft) was among 15 finalists selected



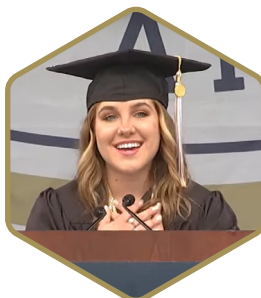
Jesudunsin Awodele



Grace Krahn



Naia Butler-Craig



Catherine Schlabach

in NASA's 2023 Revolutionary Aerospace Systems Concepts – Academic Linkage (RASC-AL) competition. Team members included: **Maya Hasumi, Mollie Johnson, Griffin Jourda, Andre Magyar, Garrett Matheson, Andrew Reagan, Sajni Saravanan, Stafford Saxton, Elle Smith, and Zach Turnage.** They later went on to win in the best technical paper category.

- **Preethi Mysore, Satvik Kumar, and Alexander Chipps** were among 38 Tech students to receive National Science Foundation Graduate Research Fellowships. The program recognizes and supports outstanding graduate students in NSF-supported STEM disciplines who are pursuing research-based master's and doctoral degrees.
- **RotoJackets**, led by **Luke Lawver**, won their second straight Collegiate Drone Racing championship.
- **Mollie Johnson** was awarded the Donnell W. Dutton Outstanding Senior in Aerospace Engineering Award.
- **Satvik Kumar** was awarded the Aerospace Engineering Outstanding Senior Scholar Award. It is funded through an endowment established by former school chair Donnell W. Dutton, AE 1940. The \$1,000 award is given annually to the graduating student with the highest cumulative GPA.
- AE doctoral student **Marilyn Braojos Gutierrez** received Georgia Tech's Goizueta Foundation Fellowship.
- Ph.D. student **Logan Feld** received the NASA Space Technology Graduate Research Opportunities (NSTGRO) Fellowship with an award of up to \$84,000.
- AE Ph.D. student **Mohamed Nassif** and AE undergraduate **Colin Burnett** were admitted into the Astrobiology Fellows group.
- **Shreyas Ashok, Aishwerya Singh Gahlot, Eleni Sotiropoulos-Georgiopoulos, Brenden Oates, Audrey Putri Waliliong, and Zoelle Wong** were awarded Vertical Flight Foundation (VFF) scholarships for their vertical flight research, totaling \$28,000.
- Fifteen AE students were recognized with \$15,000 in total scholarships at the 2023 Georgia Tech Women in Engineering (WIE) Banquet. Students included: **Suhanna Bamzai, Madeline Barnes, Lindsey Chiu, Sana Churi, Nyla Duhon, Hannah Fischer, Lauren Forcey, Morgan Gregg, Jaffa Heryudono, Mollie Johnson, Sabrina Mayor, Irelyn Meckley, Jami Milliken, Kashvi Munda, and Kylie Phelps.**
- **Carson Garrett** finished in fourth place on season 44 of the CBS Television show *Survivor*. The castaway credits 3D printing puzzles from the Yang Aero Maker Space as a huge competitive advantage.



Mollie Johnson



Satvik Kumar



Marilyn Braojos Gutierrez



Carson Garrett

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