NASA Aeronautics

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Monthly STEM Newsletter

INSIDE

(left to right) April Lanotte, Holly Gutierrez, Orville D. Squirrel, and Rachel Stagner in front of NASA's Super Guppy at EAA's 2023 AirVenture event in Oshkosh, WI. Holly was an intern in

CREDIT: NASA Aeronautics STEM Team

July 2024

It's a heatwave this summer, Aeronauts! Stay cool and hydrated when you're outdoors. This July we are celebrating NASA interns and Independence Day. NASA interns are hardworking students from all walks of life learning new skills, working on real projects alongside NASA professionals. Enjoy this edition as you learn all about some of the interns at NASA and their experiences. Our Aero Crew Highlight, Kimberly Alexander, an AETC intern, is a non-traditional student with BIG goals, so don't miss her story. And while it's summer, plans are already well underway for back to school--did you know you could get a NASA artifact from real missions for your classroom?! Read on to learn about the NEW screening round coming up with NASA Artifacts, plus NEW educator grant opportunities. Sign up with Flight Log today so you don't miss your chance to earn the latest endorsement stamps and hear about the latest opportunities to engage with NASA Aeronautics, including the X-59's first flight.

Do you need to see more of something or have a new idea for upcoming newsletters? Let us know! Do you know someone else who needs this monthly update? Share the good news and sign up for our monthly STEM newsletter. Have questions or want to be removed from the list? Send an email to april.a.lanotte@nasa.gov or holly.o.gutierrez@nasa.gov.

National Intern Day

July 25, 2024

In honor of National Intern Day, we are spotlighting some of the Electrified Powertrain Flight Demonstrator (EPFD) project interns. They will be heading to EAA's AirVenture in Oshkosh, WI and to AIAA in Las Vegas, NV to support Aeronautics. Two big engagements for NASA and our interns are here to help!

Gryson Gardner

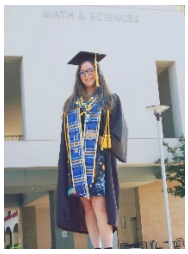
My name is Gryson Gardner, and I am a senior electrical engineer at Michigan State University, expecting to graduate with a Bachelor of Science in Electrical Engineering in May 2025. As the project manager for a NASA-funded drone research initiative at MSU, I take immense pride in the accomplishments of my team. At NASA Ames, I am contributing to the Electrified Powertrain Flight Demonstration project, focusing on the development of advanced battery systems. Through this work, I have gained extensive knowledge about the advanced applications of these battery systems and the optimal cells for various scenarios. Furthermore, I aspire to explore topics beyond electrical engineering to broaden my skill set. I have experience as a survivability engineer at Northrop Grumman, where I contributed to critical engineering projects. Additionally, I worked as an electrical engineer at Blueflite, designing and developing electrical systems for autonomous delivery drones. I am planning to attend Purdue University to pursue a master's degree in electrical engineering.

Sarah Freeman

Hi everyone! My name is Sarah Freeman. I am entering my senior year at Miami University in Oxford, OH where I am double majoring in mechanical and manufacturing engineering. I am working at GRC this summer as a thermal engineering intern. My projects include exploring novel techniques to cool electric aircraft components, such as immersion cooling, and researching how to model battery thermal runaway with simplified bulk thermal properties. I am from the Cleveland area, so GRC has been an integral part of inspiring me to be an engineer, beginning with the "Star Parties" they used to host for elementary school students at the Metroparks. In addition to developing my

Aeronautics Intern Crew Highlight

Kimberly Alexander, *Data & Analytics Intern for Aerosciences Evaluation and Test Capabilities*



Kimberly Alexander is a Data and Analytics Intern with the Aerosciences Evaluation and Test Capabilities (AETC) team. She is a non-traditional student taking on new challenges and crushing it! Read on to learn more about Kimberly's journey from service industry to NCAS participant to NASA intern.

"Currently, I am participating in my second term as a Data and Analytics Intern with the Aerosciences Evaluation and Test Capabilities (AETC) portfolio office. I am pursuing my master's degree in applied mathematics at the University of California, Riverside, where I also earned my bachelor's degree in pure mathematics while conducting research in machine learning.

As a non-traditional student, I began my educational journey at Riverside City College, initially studying graphic design while working in the food and beverage industry and singing for a local band. Influenced by my parents, who were math and science educators, I discovered a passion for mathematics and decided a change of major was in order. Shortly after this switch, I learned about the NASA Community College Aerospace Scholars (NCAS) program, my first professional introduction to NASA. Inspired by intern speakers during this program, I completed the NASA L'Space Mission Concept Academy (MCA) and the L'Space NASA Proposal Writing and Evaluation Experience (NPWEE), with aspirations to secure an internship in technology and aerosciences.

Presented with an opportunity within AETC by my mentor, Erik Lopez, I have worked with facility managers across Ames, Glenn, and Langley Research Centers and Marshall Space Flight

technical skills through learning about thermal design considerations and new simulation software, I am also looking forward to experiencing how NASA engages with the public through air shows, educational outreach, and conferences. I am so excited for everything this summer has to offer!

Shanell Sinclair

I am a non-traditional student studying mechanical engineering at Montana State University with minors in aerospace engineering and mechatronics. I grew up on a rural reservation in Browning Mt. I am an enrolled member of the Blackfeet Tribe U.S. and the Northern Peigan Tribe in Canada. My family consists of my husband, three children and our dog. I have the desire to learn more about electrical engineering and how electric aircraft engines are modeled. My hope is to learn new skills in modeling programs including NPSS and MATLAB/Simulink. For fun, I enjoy playing DnD and Nintendo games such as Super Mario 3D world, Kirby, and It Takes Two. My free time is spent doing family activities and dedicating time to various organizations that support the advancement of indigenous people in STEM.

Tristan Finazzo

My name is Tristan Finazzo, and I'm a multimedia communicator with interests in science communications, sustainability, field reporting, and East Asia.

This summer, I am serving as a strategic communications intern for the Electrified Powertrain Flight Demonstration (EPFD) project, where I'm helping communicate the goals and progress of EPFD across project leadership, industry partners, media, and the public. In my first month on the project, I have discovered the unique importance of storytelling to NASA's missions. For the remainder of my internship, I'm excited to attend both Oshkosh and AIAA Aviation, and I hope to learn more about the ways in which NASA's historians, news desk, and other communications team members capture and share its story with the world.

I recently graduated from NYU with master's degrees in Global Journalism and East Asian Studies and am in the process of publishing my M.A. thesis, a feature article on light pollution and dark-sky conservation in Taiwan. Outside of work, I strive to maintain my Chinese and

Center to define, formulate, and evaluate performance and value metrics for nearly 50 "Tier 2" wind tunnels.

The most rewarding part of the internship is building connections with facility managers and professionals and witnessing firsthand the capabilities of these facilities and their contributions to NASA goals. As an AETC intern, I strive to enhance research and test capabilities for these facilities. I am honored to be continuing my work with AETC through the summer and looking forward to either accepting my next NASA internship this fall or returning as a teaching assistant in the UCR Mathematics Department.

I attribute my success in my current internship to my ability to balance experience in visual, digital, and performing arts with strong interpersonal and technical communication skills, as well as my deep-rooted education in mathematical logic. My skills have been honed by supportive mentors and the opportunity to contribute to meaningful work in aerosciences.

With the professional experiences provided by AETC and UCR, I am dedicated to continuing my contributions long-term in data analysis and visualization in aerosciences with NASA. ”

Interns at NASA work with NASA professionals on real, ongoing projects. Head to the NASA internship webpage for more information on how students (and educators!) can become an intern, and join the best place to work 12 years in a row! **Applications for Spring 2025 are due August 23rd, 2024.**

From NCAS Alum to NASA Intern

Ashley Rodriguez, *Aerosciences & Evaluation Test Capabilities Intern*

NASA Community College Aerospace Scholars (NCAS) is a program focused on opportunities for community college students and has three missions designed to increasingly challenge and build student's

Korean language skills and spend my remaining free time writing, traveling, hiking, and reading science fiction.

NASA interns are a valuable part of the NASA family and serve vital roles for their missions. If you're in the AirVenture neighborhood, find us at the NASA pavilion, KidVenture or check out one of the many NASA events going on throughout the week at different locations. Happy Flying!

Student Opportunities

There's Still Time to APPLY for Spring 2025!

NASA Internships

NASA has made some changes to internship application deadlines, so make sure to check regularly for upcoming events and don't miss the ***Spring 2025 deadline on August 23rd, 2024***. NEW projects are added all the time with some opportunities for students starting at 16 years old and others for educators. Learn more HERE about available STEM and non-STEM projects at various NASA centers that offer in-person, virtual, and hybrid opportunities.

Join the NASA Internship Experience: Insights from Interns and Mentors, a virtual internship event on **Friday, July 26, 2024, at 12pm EST**. Learn more about this event HERE. Whatever students are interested in studying, NASA has a place for them!

Gateways to Blue Skies winners!!

Gateways to BlueSkies is a college initiative that focuses on climate-friendly technologies and applications. The theme for 2024 – Advancing Aviation for Natural Disasters, challenged students to investigate and conceptualize aviation-related systems to improve the capabilities of response to natural disasters.

STEM knowledge and skills. Students collaborate to work on real NASA missions and goals. NCAS alumni are also eligible for NASA internship opportunities.

Ashley Rodriguez completed her mission with NCAS while attending Miami Dade College. She is now a Strategic Communications intern on the Aerosciences Evaluation and Test Capabilities (AETC) team earning her bachelor's in communications from Florida International University. Read on to learn more about Ashley's experience as an NCAS participant.

"I heard about NCAS from a student who spoke in my Python programming class at Miami Dade College. I honestly didn't think I was what NCAS or NASA would be looking for as a participant because I am a non-traditional student. I came back to school after a few years in the workforce and became a mother of one. I saw this as an amazing opportunity since NASA has always been a dream of mine. I applied, and I got in! All missions of NCAS were impactful for the teambuilding, leadership, and problem-solving skills I earned, the experience to network with like-minded individuals at Armstrong Flight Research Center, and having fantastic mentors in the program who set up a great on-site experience I won't ever forget!

NCAS was truly unforgettable and helped me build multiple skills and create connections and friendships with like-minded people I otherwise would have never met. I am very thankful for NCAS and the opportunities it has opened for me! If I had never participated in NCAS, I'm not sure I would have been confident enough to apply for NASA internships or even know where to start to apply. NCAS really broke me out of my shell and gave me the tools and network needed to continue forward and earn a NASA internship. During my Spring internship, the work I was doing inspired me to switch from a major in Cybersecurity to Communications. I am now beginning that program at a new school and loving my program! I am thankful for my NCAS mentors for inspiring this decision and career change into a field I am very passionate about."

Congratulations to the California State Polytechnic University, Ponoma team who won first place with their project "Aero-Quake Emergency Response Network"! Team members were awarded the opportunity to intern at any of the four Aeronautics-focused centers: Langley Research Center, Glenn Research Center, Ames Research Center, and Armstrong Flight Research Center for the 2024-2025 academic year.

2nd Place Award: Columbia University
Project: AVATARS: Aerial Vehicles for Avalanche Terrain Assessment and Reporting Systems

Future Game Changer Award: Cerritos College
Project: F.I.R.E (Fire Intervention Retardant Expeller)

Most Innovative Award: North Carolina State University
Project: Reconnaissance and Emergency Aircraft for Critical Hurricane Relief (REACHR)

Stay tuned for the announcement of the theme for the 2025 Gateways to Blue Skies competition. COMING SOON!

NASA in the Classroom & Educator Opportunities

NASA STEM in the Classroom! NQuest

NQuest is a new middle school STEM program brought to you by the NASA Ames Research Center, Chabot Space and Science Center, and NASA's Office of STEM Engagement. NQuest offers in-person field trips and virtual experiences which aim to spark a lifelong interest in STEM. NQuest virtual workshops are offered nationwide every Monday. All you need is a laptop, projector, and basic classroom supplies.

In-person field trips are offered at the Chabot Space and Science Center in Oakland, CA. NQuest is offered at no

Thanks for your dedication to the mission, Ashley. We're honored to have you. Join Ashley as an NCAS Alumni and keep a look out for the next application period open in October 2024. Visit the NCAS website for more information on upcoming sessions.

Professional Development

Come See Us in Person!

AirVenture
EAA Airventure Oshkosh 2024
Oshkosh, WI on July 21-28, 2024: The NASA family will be at AirVenture 2024! Come meet the people behind the projects at the NASA pavilion. Kids 18 and under get in FREE, so bring them along to have some fun with STEM activities at the STEM Zone. Visit us at KidVenture next to the EAA Museum for more STEM activities with NASA. Find us at the AeroEducate tent for a career forum, hands-on activities, drones, and more! There are lots of places to find NASA at AirVenture, so stop by and see what we're up to.

AIAA ASCEND
Las Vegas, NV on July 29-Aug 2, 2024: Join NASA and learn more about the technology helping us to achieve a more sustainable, high-tech future.

Virtual Opportunities

Start Earning Stamps! Flight Log

Are you going to AirVenture? Sign up for Flight Log today to start earning endorsement stamps for engaging with NASA STEM like doing activities with us at AirVenture!

It's an exciting time to fly virtually with NASA. Add your email to our contact list to stay up to date on

cost on a first-come, first-served basis, and prioritizes signups for Title I schools. This prioritization reflects the program's commitment to promoting equity and increasing access to STEM education for those who traditionally face barriers. Apply by ***July 25th, 2024***. Learn more about the NQuest program HERE.

COMING SOON!! NASA Artifacts application

Wouldn't it be cool to have a real space shuttle tile in your classroom for students to see AND hold?! The NASA Artifacts office gives educators an opportunity to have real items from NASA missions in their classrooms. These items include astronaut training clothing, shuttle tiles, and more. The next screening period begins in August. Get your application ready to get it in early and get an authentic NASA mission artifact for your classroom! Stay tuned for more information, but in the meantime, check out the NASA Artifacts website to learn more about the screening process.

Just released! NEW TEAM II grant funding category

Next Gen STEM's Teams Engaging Affiliated Museums and Informal Institutions (TEAM II) program is pleased to announce an upcoming FY2024 Notice of Funding Opportunity (NOFO) that expands the current program from a two-tier to a three-tier system by adding a mid-level funding tier. The current NOFO is now live! The new mid-level funding tier was created in response to feedback from the informal education community.

The new "STEM Innovator" tier will fund awards of approximately $250,000 in addition to the highest tier award--the "National Connector" award for up to $900,000 and the "Community Anchor" tier, which will continue to offer awards up to $50,000. Moving forward, the Community Anchor tier opportunity will be offered each fiscal year and the STEM Innovator and National Connector tiers will be offered in alternating years. The current NOFO includes the Community Anchor and STEM Innovator tiers and the next NOFO will focus on the Community Anchor and National Connector tiers. By adding the mid-level tier, NASA and Next Gen STEM aim to broaden the number and type of awards made to Informal Education Institutions for creating innovative, NASA-inspired programming for K-12 students and their families.

go.nasa.gov/team-ii

upcoming flights and other opportunities. By the time you know it, we'll be flying on the X-59!

NASA CONNECTS: Are you interested in other professional development opportunities? Create a new account or log into NASA's STEM Gateway to find a session that interests you.

Did you know?

July is National Picnic Month. NASA values work-life balance and puts strong emphasis on family time. This month, take a picnic with family and friends to enjoy the summer outdoors. Try some of these fun outdoor activities to make your picnic a summer event! Fly your own tetrahedral kite or have a paper airplane contest to see which one flies the farthest. Have fun and stay hydrated!

July 2nd is National Wildland Firefighter Day. NASA's ACERO Program is dedicated to improving aviation's response to wildland fires and providing assistance to emergency personnel. Know where wildland fires and potential hotspots are occurring across the globe with NASA FIRMS, the Fire Information Resource Management System. Continue reading HERE to learn more about the ACERO Program.

July 4th is Independence Day! In 1776, the Declaration of Independence was signed into action giving the colonies their independence from Great Britain. On June 28, 1870, July 4th was declared a federal holiday.

July 24th is National Amelia Earhart Day. Amelia Earhart was a pioneer for women pilots. She made several successful flights before disappearing over the Bermuda Triangle. Explore NASA Aeronautics' leveled reader all about Amelia Earhart and her journey in aviation. Find more readers and e-books from NASA.

July 29th is National Chicken Wing Day. NASA doesn't make chicken wings, but they do make aircraft wings. Did you know NASA tests different prototypes for different flying jobs? The PRANDTL-M wing was a top design for the first aircraft on Mars. Check it out HERE!

Links to our Aeronautics STEM Resources:

Aeronautics Research Resources: (all ages) This link takes you to a wide variety of educator resources, Aeronautics@Home, ebooks, National Academies Reports, webinars, lithographs and mini posters, the NASA Aeronautics Research Institute, and more.

Aeronautics@Home: (K-12) This web page contains aeronautics-based activities, videos, games, and more that can be completed at home, in the classroom, or in any number of settings. Topic areas include: "Build It!" "Explore It!" "Watch It!" "Solve It!" "Color It!" and "Aero Educator Resources". Coming soon: "Read It!" and "Do It!"

Aeronautics Innovations Challenges: Keeping up with our many design challenges and opportunities for both post-secondary and K-12 can be tough. In response, we created a "one-stop shop" to pull them all together in one location.

Flight Log Experience: (K-12, post-secondary, general public) Sign up to send your name with NASA Aeronautics on X-planes, UAS flights, and more as you build your virtual NASA flight log. Earn virtual endorsement stamps and mission patches and access aeronautics STEM activities and resources. Educators can sign up their entire class.

NASA Express Sign-Up: (K-12, post-secondary) Have you signed up for NASA's NASA EXPRESS weekly newsletter? This newsletter contains the latest information for educators (K-12 and post-secondary) about new resources, design challenges, internships, and workshops. It is THE go-to for the latest STEM news.

Aeronaut-X: (K-12) Our Next Gen STEM: Aeronaut-X team provides new and exciting STEM activities that focus on cutting-edge aeronautics education and the future of flight.

Museum and Informal Education Alliance: (Informal Educators and Museums) Not in a classroom? Looking for informal education materials? Join NASA's Museum and Informal Education Alliance, where you have access to NASA resources—including aeronautics—for your program, organization, museum, science center, or library. Find out about events happening near you and in the virtual world, and let the MIE Alliance help you build your programs! Access to guest speakers, the latest announcements about grant programs, and an active community network allow you to connect with other like-minded people in a supportive, engaging, and aerospace-focused neighborhood.

NASA Aeronautics for Educators Facebook Page: (K-12, post-secondary) Join our NASA Aeronautics for Educators Facebook page, where the latest aeronautics updates, professional development opportunities, lessons and ideas are freely shared.

NASA Connects: (K-12, post-secondary) NASA Connects is a network of educators who come together to collaborate, share NASA resources, and create personal collections of materials that can then be shared with others. Members can join groups tailored to their specific interests.

National Aeronautics and Space Administration

Headquarters
300 E. Street, SW
Washington, DC 20546

www.nasa.gov/aeroresearch