



NASA Aeronautics

March 2024
No. 34

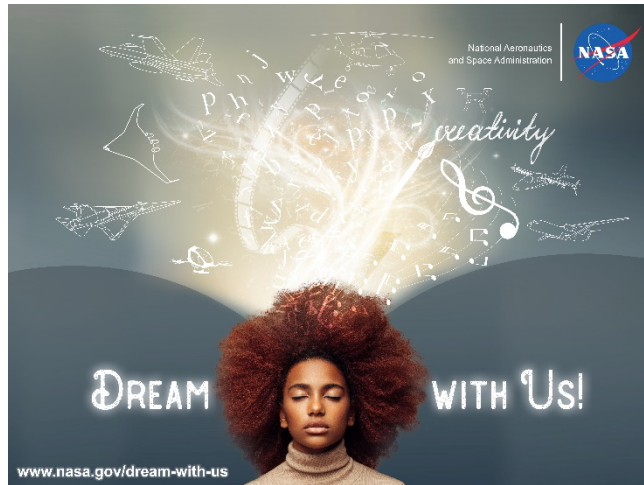
Monthly STEM Newsletter

INSIDE

Celebrate Women's History Month

Dream with Us Design Challenge

N3, Virginia Space Grant Consortium, NASA Internships, and more!



NASA's Dream with Us Design Challenge asks students in grades 6-12 to share their

NASA's ACERO project on new ways to prevent natural disasters, mitigate during a

March 2024

Spring is coming, Aeronauts! This month we celebrate Women's History Month. NASA pays tribute to the contributions of women all over the agency both past and present who are inspirations to future generations. Check out our Aero Crew Highlight of the month, Elizabeth Ruth. She is a research pilot with NASA working to collect important data that drives the future of aeronautics. The 2024 Dream with Us Design Challenge launches this month, so read on to learn how students can submit their visions of the future of flight to NASA experts. New student internship projects are available and extended deadlines end this month, so apply today for NASA internships, challenges, and other opportunities to be a part of change and the future of NASA. Learn more about how you can stay up to date with new flights and opportunities to engage with NASA Aeronautics.

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.

Women's History Month

March

Women have played a vital role in history, and this month we celebrate their contributions and achievements. In 1981, women were celebrated during "Women's History Week", but after a petition by the National Women's History Project in 1987, that week became the whole month of March. Year after year, women's historical achievements and milestones are celebrated around the country.

NASA recognizes amazing women who are trailblazers for future generations. Women of NASA are celebrated for their expertise, contributions, and dedication to the mission around the agency. They fill roles such as engineer, scientist, pilot, and educator throughout NASA. They inspire girls to explore and dream big for their futures. Here are a few examples:

Jerrie Cobb (1960)

Some aircraft pilots also dream of flying in space. Jerrie Cobb obtained her private aircraft license at age 16 and her commercial license when she turned 18. She was an accomplished pilot breaking records and receiving awards for her achievements. Because she dreamed of flying in space, Jerrie Cobb volunteered to test the Gimbal Rig, a multi-rotational device that teaches astronauts to control tumbling spacecrafts. Although she did not achieve her dream of going to space, Jerrie Cobb is celebrated for her philanthropy in flying supplies and medicine into needed areas for non-profit organizations.

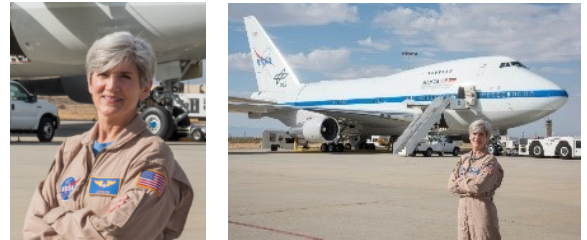
Christine Mann Darden, D.Sc. (1967)

You don't have to be a pilot to support the Aeronautics mission. [Dr. Christine Darden](#) joined NASA Langley as the last generation of "human computers". She earned her doctorate from George Washington University in mechanical engineering and became a researcher in aerodynamics. In 1999, she was appointed as director of NASA's Aero-Performing Center Management Office responsible for research in air traffic management and aeronautics programs in other centers. During her 30 years of service, Dr. Darden wrote over 50 publications covering aeronautics topics such as sonic booms, supersonic wing design, and many others.

Learn more about the [women at NASA](#) supporting the mission towards a brighter future. Celebrate their accomplishments and the women that came before them for [Women's History Month](#).

Aeronautics Crew Highlight

Elizabeth "Liz" Ruth, *NASA Research Pilot*



Elizabeth Ruth is a NASA Research Pilot who helps NASA do important research. She has also visited all 50 states and all 7 continents. Read on and get inspired by Elizabeth's journey.

“ I am a NASA Research Pilot. I fly aircraft to support NASA scientific research projects under the Airborne Science Program. I have flown the Stratospheric Observatory for Infra-Red Astronomy (SOFIA) and a Boeing 747 that holds an infra-red telescope with a 9-foot diameter mirror, now retired. I also flew the Gulfstream III, which conducts precision ground mapping using a JPL-designed and operated synthetic-aperture radar pod. I currently fly the Global Hawk remotely piloted vehicle.

I grew up at China Lake Naval Air Station, a Navy base in the upper Mojave Desert used for missile testing. With all the fast-moving jets and sonic booms during the day and the brilliant stars in the night, there was always a reason to be looking up to the sky. I always wanted to be up there to be part of the action and knew that one day I would be a pilot. Luckily enough, the military began training women to fly (for the first time since World War II) right as I was graduating from high school, so I set my sights on joining the Air Force. I attended USC in the Air Force ROTC program and was selected to attend Undergraduate Pilot Training. I flew for the Air Force for 8 years as a T-38 instructor pilot and a T-43 (Boeing 737-200) aircraft commander and instructor. After the air force, I joined United Airlines, where I flew the Boeing 737-300, 757, 767, and 777 aircraft as a domestic and international pilot.

I took a break from professional flying to raise my daughters, but I still had the flying bug. I

NEW STEM Engagement! **2024 Dream with Us Design Challenge**

Feb. 28th - April 30, 2024



The 2024 Dream with Us design challenge is **NOW OPEN!** For students ages 13-18, this team-based challenge gives students a chance to share their vision for the future of aviation with NASA experts. This year's theme is focused on natural disasters--students are developing new and improved ways aviation can help with natural disaster response.

NASA's Advanced Capabilities for Emergency Response Operation (ACERO) Project researches the capabilities of drones and advanced technologies to help improve wildfire coordination and operations. NASA is asking students to dream of new ideas that will be shared with NASA's ACERO project and others to design or improve current systems and technologies responding to natural disasters with new aviation such as drones and air taxis.

Challenge submissions will be accepted **March 1 - April 30, 2024**. Learn more about the challenge and NASA's ACERO project on [the Dream with Us Design Challenge webpage](#).

Student and Internship Opportunities

Deadline Approaching! N3: NASA's Neurodiversity Network Internship

NASA's Neurodiversity Network offers neurodiverse students an opportunity to apply for a summer internship to spark interest in STEM careers. Students must be



happened to meet an Armstrong NASA pilot while traveling and found out about this cool flying job out in the desert, right near where I came from. I qualified with my extensive flying experience in different types of high-performance and heavy military and civilian aircraft. I got the job, and it has been very satisfying to fly missions to explore the unknown and do work that benefits the whole world.

Now that I am at the far end of my career, I realized that I have been lucky enough to have fulfilled my personal and professional goals. I got to fly a variety of aircraft in a variety of missions, and I have the family I always hoped for. Flying with NASA has been fun and memorable, just by the nature of the job and the caliber of the people I got to work with. It never got old to be in a room with smart, dedicated people and witness the creative problem-solving process that makes NASA great.

I remember SOFIA flights were always flown at night, and we normally flew out of Palmdale during most of the year, but in the Summer, we would relocate to Christchurch, New Zealand to take advantage of their long winter nights and clear, dry atmosphere at that time of year. New Zealand has amazing scenery, and the community of Christchurch was very welcoming to us, which always made the deployment fun. We would fly down south near Antarctica, where the aurora australis (the southern version of northern lights) would be visible. One night, we had the aurora dancing all around us for hours. It was incredibly beautiful, and I will never forget it.

Another great memory was when I deployed with the Gulfstream up to Fairbanks, Alaska to support the ABOVE (Arctic Boreal Vulnerability Experiment) project, and it was a terrific experience. The scientists from the program flew with us, took us on field trips, and invited us to a BBQ to meet the rest of the team, which really enhanced our understanding and appreciation of the project. One unique experience was exploring a tunnel that was dug into the perma-frost and used for research. We were able to see layers of frozen dirt, rocks, plant material, and water dating back to 20,000 years ago.

I love flying, so it has been a real privilege to be able to do my favorite thing for work. I also love to

enrolled in high school and are 16 year of age or older. Submit an application by **March 8, 2024**, to spend a summer gaining valuable experience from NASA experts in various STEM fields. Check out the [N3 Internship site](#) to learn more.

Deadline this Month! Virginia Space Grant Consortium

The Virginia Space Grant Consortium is partnering with NASA Langley Research Center to offer community college students hands-on research experience at the NASA Wallops Flight Facility. During summer 2024, students will work alongside NASA research advisors to learn more about project work, communication, teamwork, and exposure to various STEM careers. Applications must be submitted by **March 18, 2024**. Click on [this link to learn more](#) about this amazing opportunity.

NEW! FALL Projects OPEN for Applications! NASA Internships

Fall projects are available now. [Apply for a NASA internship](#) for the Fall 2024 session. Projects for STEM and non-STEM majors at various NASA centers that offer in-person, virtual, and hybrid opportunities are currently available. Get your application in by **April 5, 2024**, and join NASA experts this fall to find solutions, create new innovations, and break barriers towards a better future.



Design Challenges and Grant Proposals

Extended Deadline!

University Student Research Challenge



travel, seeing new places and learning about different cultures has always fascinated me. I have always been a huge reader and enjoy listening to audio books. It's like another version of travel. I enjoy almost any genre, but history and science-fiction are high on my list. I suppose I like looking back to understand where we came from and looking ahead to where we could go. ”

Professional Development

Come See Us in Person!

[National Science Teachers Association \(NSTA\)](#)
March 20 - 23, 2024: Inspire, connect, and learn best practices and strategies to bring science to life in the classroom. NASA will be presenting STEM activities that help students learn more about ACERO and aeronautics' work with wildland fire mitigation.

[Women in Aviation International Conference / Girls in Aviation Day](#)

March 21 - 23, 2024: Get excited about aviation with keynote speakers, education workshops, an awards ceremony, and more at the Women in Aviation International Conference. The NASA Aeronautics STEM team will co-host an education workshop, host activities at Girls in Aviation Day, and be available for questions and information at the NASA booth.

Virtual Opportunities

[NASA Dream with Us Design Challenge](#)
Educator Professional Development: DATE Coming! Do you want to learn more about the Dream with Us Design Challenge and other opportunities with NASA? Join the Aeronautics STEM team to learn how this challenge can support you and your students in both formal and informal learning environments.

Sign up, today! Flight Log

Sign up for Flight Log today and get notifications on new upcoming flights straight to your inbox. Earn an endorsement code for your flight log when you complete activities and join NASA Aeronautics STEM engagements online and in-person. We have new flights and opportunities being added to [Flight Log](#) all the time, and before we know it, your name can be flying on the X-59 first flight!! Add

The [newest solicitation window](#) is now open! Join the NASA University Student Research Challenge family and collaborate with peers to contribute to the evolving field of aeronautics! NASA is seeking creative ideas and concepts relevant to NASA Aeronautics from interdisciplinary student teams.

- Receive up to \$80,000 to pursue your ideas
- Gain technical and entrepreneurial experience
- Open to all majors and interdisciplinary teams (engineering, business, etc.)
- Interface with NASA experts and receive exposure to the aerospace industry

Proposals for the next round have been **extended** to **March 21, 2024**.

In case you missed it...

Watch it On Demand! 2024 imaginAviation Free to Watch and Free to Attend!

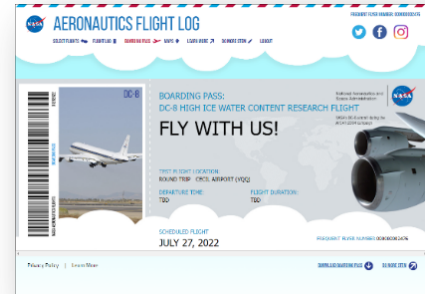
This year's enriching activities to STEM and matter. An the first look



Dream with Us design challenge, and the launch of imaginAviation's *NEW* mentorship program are some of the things that made this event successful. Watch the showcase on demand and get excited for next year's 2025 imaginAviation showcase.

showcase offered resources and infuse excitement in aeronautics subject early career panel, at the *NEW* 2024

your email to our [contact list](#) to stay up to date on upcoming flights and other opportunities. It's a great time to fly with us!



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?

March 4 - 10th is Women in Aviation Week. This week is celebrated in honor of the first woman to earn her pilot's license. Raymonde de Laroche received her pilot's license on March 8, 1910, in France. Honor this week for women while you create and fly your own paper airplane.

March 14th is Pi Day, and who doesn't love pie? Ok, not that kind of pie. This pi is the constant that represents the ratio of a circle's circumference to its diameter. Pi is approximately 3.14, but actually has 1,000,000 digits. How many can you accurately remember?

March 31st is National Crayon Day. Coloring has evolved so much over the years, and it's not just for kids anymore. Adults have their own coloring books too. It can also be used as a form of meditation and focus. Find your Zen again with these [NASA Aeronautics coloring pages](#).

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.

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