



# NASA Aeronautics

December 2023  
No. 31

## Monthly STEM Newsletter

### INSIDE

Celebrate 120 years of Flight

NEW Release! NASA+ and imaginAviation

NCAS, NASA Tournament Lab, and more!



*On December 17, 1903, two brothers from Dayton, OH--Wilbur and Orville Wright successfully flew a powered aircraft above the sand dunes of Kitty Hawk, NC. Credit: NASA*

## December 2023

Winter is almost here, Aeronauts (December 21<sup>st</sup> marks the Winter Solstice for those of you keeping track)! Hopefully you'll be able to snuggle up during this cold month and enjoy much needed unplugged time with family and friends (or maybe FLY to somewhere warm if you don't live in a warm climate??). This month there is a lot to celebrate--first, we are celebrating 120 years of flight. And have you heard that the X-59 went into the paint barn to get new livery just in time for holidays? Last year the X-59 arrived in Ft. Worth wrapped up with a bow for load testing. This year we are gearing up for its grand debut! Check out our Aero Crew Highlight of the month, Susan Bell. She has an amazing story to tell, including flying upside down! There's still time to apply for NASA internships, challenges, and other opportunities that have deadlines coming soon. Read on to find out more about winter STEM activities and 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 newsletter. Did someone share this with you? [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](mailto:april.a.lanotte@nasa.gov) or [holly.o.gutierrez@nasa.gov](mailto:holly.o.gutierrez@nasa.gov).

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## 120 Years of Flight

December 17th

On December 17, 1903, [Wilbur and Orville Wright made aviation history](#). These curious brothers from Dayton, OH flew the first human-powered aircraft 120 feet for 12 seconds, with a single pilot above the sand dunes of Kitty Hawk, N.C. They were the first to put a 700-pound, self-powered machine into the air.

Twelve years following the Wright Brothers' first flight, the National Advisory Committee on Aeronautics (NACA) was born to advance aeronautics research. Four decades later, NACA became NASA to include space research along with aeronautics. NASA aeronautics research has helped flight continue to grow and evolve towards a more sustainable future. With the help of a diverse workforce of brilliant minds, [NASA has made many contributions to aviation and air traffic management](#).



*Dec. 1936 NACA meeting at the home of Orville Wright (Orville in the front row, center). Image credit: NASA.*

[Check out this timeline to learn more about the Wright Brothers and NASA's contributions to aviation over the past century](#). NASA has always been with you when you fly!

## NEW Release! NASA+



**Watch it Today!** NASA TV is now NASA+ and it has lots of new content. Discover what NASA is all about and the many innovations and missions going on at the National Aeronautics and Space Administration. Watch it live at

## Aeronautics Crew Highlight

Susan Bell, NASA Technician in Suborbital Accommodation



Susan Bell is a NASA Technician in Suborbital Accommodation. She is our Aero Crew Highlight for December, and she has a super cool story full of adventure and education to share with you.

“ I assist JPL instruments with airborne and small unmanned aircraft systems (sUAS) campaign documentation and aircraft integration. I can fly as a qualified non-crew (QNC) instrument operator and am working towards my sUAS NASA pilot certification.

I have a wildly varied background including working in stop motion animation in Hollywood as a producer on Robot Chicken and flying traffic reporters for Los Angeles radio stations as a pilot. I hold a BA (Bachelor of Arts) in telecommunications from Baylor University, an MFA (Master of Fine Arts) from Florida State film school and recently finished an FAA (Federal Aviation Administration) Part 147 Aviation Maintenance Technician program for my Airframe and Powerplant (A&P) mechanic ratings. I grew up in Central Texas on a cattle ranch where I picked up mechanical skills and general resourcefulness.

I am a licensed commercial pilot with flight and ground instructor ratings and Part 107 sUAS pilot in addition to my A&P mechanic. I am most known for flying competition aerobatics and back in 2018 I won the US Sportsman National Champion title. I own an Extra 330SC that originally flew in the Red Bull Air Races. I actually tore my ACL and meniscus while practicing two years ago - the flying is intense! - and hope to return to competition in 2024.

<https://plus.nasa.gov/> or download it onto your preferred TV platform. Want to take it on the go? Download the app in the App Store and Google Play store for hundreds of videos and live content from NASA. Learn more [here](#) about the NEW free streaming service, NASA+.

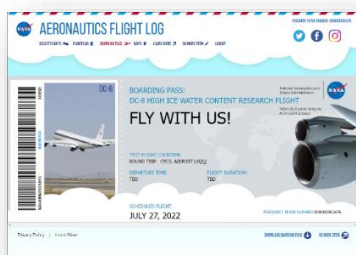
## Virtual Opportunities and New STEM Content

**The X-59 gets a makeover!** That's right, the X-59 has gone into the paint barn. Did you know an aircraft's paint is called livery? This term is commonly used to describe uniforms which is what an aircraft's design becomes, their uniform. Learn more about the [X-59's livery here](#). Try these [STEM Aircraft Design and Identification Activities](#) to practice your own livery designs on the X-59.

### **It's almost here! Celebrate the X-59 Roll-Out**

Host or participate in a Virtual Watch Party! As the X-59 gets closer to its grand unveiling, we're working to put together plans to help you host a virtual watch party to be a part of this moment in aviation history. Send us a message at [aerostem@nasa.onmicrosoft.gov](mailto:aerostem@nasa.onmicrosoft.gov) to let us know you want to host an X-59 watch party. Be one of the first hosts to sign-up and receive some NASA Aeronautics goodies for you and your party. **Stay tuned for the watch party date—coming very soon!**

Don't miss another flight or opportunity and let us alert you in your inbox! We have new flights and opportunities being added to [Flight Log](#) all the time, including the rollout of the X-59, and before we know it, your name can be flying on its first flight!! Add 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!



I came to NASA in 2013 to work in Earth science communications as a web producer. This led to my broad knowledge of both Earth satellite and suborbital missions. I produced several of NASA's viral Earth Day events on social media such as #GlobalSelfie and #AdoptThe Planet which resulted in more awareness of NASA's work on our home planet. My outreach efforts often focused on airborne science, and I attended multiple years of AirVenture giving updates on what NASA campaigns and aircraft were studying and how these airborne campaigns impact the public. In mid-2023 I left communications to move into JPL's new Suborbital Accommodations group.

Besides flying, I love to hike and am an avid gardener. Also remodeling a 1927 Tudor Revival house and continually find interesting old house challenges. I plan to start flight instructing soon too and eventually want to own a flight school, where I can use my A&P to fix the planes the students break.

Favorite memories - I'll go with two. I had to complete hypoxia training when flying with Airborne Snow Observatory, which was such an invaluable experience as a pilot. Second was at Oshkosh AirVenture 2019 when Patty Wagstaff asked me to hold the pole during her afternoon airshow inverted ribbon cut. ”

Wow, Susan Bell, your story is an inspiration! Stop animation, who doesn't love cartoons! Thank you for sharing your story and for all you do for the mission at NASA. Stay safe out there, and *Happy Flying!*



## Professional Development

**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.

## Winter STEM Activities (oldies-but-goodies and a few new ones!)

If you are looking for fun STEM activities with your students, we have lots of fun in store for you! Our [Winter Break Activities](#) flyer has a great collection of hands-on aeronautics activities that are perfect for students who want to be anywhere but in a classroom,, are at home, or are a part of your winter programs at museums and other locations.

Newly added to our website: do you have a 3D printer, laser engraver or cutter, or other craft-y machine you just HAVE to do something with? Why not try out some of our new designs! Make our X-59 snowflake, or a NASA worm! More designs are being added soon, so be sure to check back.



## Save the Date! imaginAviation 2024



Discover...Advance...Catalyze with imaginAviation p! Watch last year's showcase [On Demand here](#).. Registration is coming soon, so stay tuned as we get closer to [imaginAviation 2024!](#) Watch last year's showcase [On Demand here](#).

## Did you know?

**December** is National HIV/AIDS Awareness Month. HIV or, the human immunodeficiency virus is an incurable disease that attacks the immune system. If left untreated, it can develop into acquired immunodeficiency syndrome, or AIDS. Learn more about [HIV/AIDS from the Centers for Disease Control and Prevention](#), and speak to your healthcare professional about ways to stay healthy.



**December 27<sup>th</sup>** is National Make Cut-Out Snowflakes Day. Did you know that no two snowflakes are the same. Snowflakes are special because although they look the same and create one blanket of snow, every single one is different and unique, just like humans. [Download the X-59 Snowflake template](#) with paper or use the NEW 3D files to create your own winter wonderland.

**December 31<sup>st</sup>** is New Year's Eve. Celebrate new beginnings. Although not everyone celebrates New Years at the same time, it is a time when people make a kind of promise, or resolution to make a change or accomplish a goal for the new year. The NASA Aeronautics STEM team challenges you to choose a resolution you can strive to accomplish this coming year and beyond. Tell us all about it. Submit your resolution by **December 22, 2023**, to [aerostem@nasa.onmicrosoft.gov](mailto:aerostem@nasa.onmicrosoft.gov) and tell us:

- Name
- What will your resolution be for 2024?
- How will you accomplish your goal?
- Why is this resolution important to you?

Stay tuned to see if your resolution makes it in the January 2024 edition of the NASA Aeronautics Monthly STEM Newsletter!

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## Student and Internship Opportunities

### Deadline approaching Dec. 11! NASA Community College Aerospace Scholars (NCAS)

NASA Community College Aerospace Scholars (NCAS) has three missions designed to challenge and build student's knowledge and skills.

NCAS Mission 1: Discover [registration](#) is open **October 10 through December 11, 2023!** Students will collaborate on real NASA missions and goals. Commencing in February 2024, Mission 1: Discover takes students through a 5-week, self-paced online course where they gain broad knowledge of NASA's mission directorates and discover NASA career paths. Students can expect to hear from subject matter experts and learn about NASA's missions dedicated to space exploration, technology, and aeronautics research. Engineering design challenges are hosted at a partner institution or a NASA field center. NCAS alumni are also eligible for NASA internship opportunities. For more information, eligibility, and the application process join an information session or visit the [NCAS website](#).



**Internships: There's still time!** Students still have the chance to [apply for a NASA internship](#) for the Summer 2024 session. The first round of applications are in, but there is still time to apply. Projects for STEM and non-STEM majors at various NASA centers that offer in-person, virtual, and hybrid opportunities are still available. Get your application in by **February 2, 2024** and enjoy a summer working on NASA projects alongside NASA experts to find solutions, create new innovations, and break barriers towards a better future.



### In case you missed it...

#### NEW Release! First Woman graphic novel Issue No. 2

Did you hear that The First Woman graphic novel Issue No. 2 is finally here? Callie and RT have a new member who is a decorated pilot from the Choctaw Nation. Get your digital copies of First Woman Issue No. 1 and No. 2; today to get caught up and meet the newest First Woman! Download the First Woman app and interact with this graphic novel about diversity, equity, teamwork, and persistence.



Get your digital copies of First Woman Issue No. 1 and No. 2; today to get caught up and meet the newest First Woman! Download the First Woman app and interact with this graphic novel about diversity, equity, teamwork, and persistence. [Learn more about the First Woman graphic novel](#) available in English y en Español.



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## Design Challenges and Grant Proposals

### NASA Tournament Lab

Brought to you by NASA Tournament Lab, the Brilliant Minds for Pure Blue Skies challenge is on a mission to eliminate harmful emissions produced by air travel, and they need help from your brilliant mind. Participants 18 years and older may join as an individual or with a team to create a breakthrough revolutionary idea to eliminate or mitigate harmful emissions. Get your submission in by **December 14, 2023**, for a chance to show off your brilliant mind. [Check out the challenge page for more information.](#)



### Deadline Extended! 2024 Gateways to Blue Skies Challenge

As climate change increases the frequency and intensity of many natural disasters, NASA Aeronautics asks collegiate teams to conceptualize aviation-related system(s) that can be onboarded to improve aerial disaster management efforts immediately and into the next 10 years.



**GREAT NEWS!** The deadline to submit a non-binding Notice of Intent (NOI) has been **EXTENDED to February 27, 2024**, to [let us know you're interested in participating](#) in this year's Blue Skies Competition - and get regular communication updates from the Blue Skies Team!

## 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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