



# NASA Aeronautics

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## Monthly STEM Newsletter

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*NASA's X-59 aircraft is parked near the runway at Lockheed Martin Skunk Works in Palmdale, California, on June 19, 2023. This is where the X-59 will be housed during ground and initial flight tests. Credit: Lockheed Martin*

## January 2024

Happy New Year, Aeronauts! 2023 was a busy year for NASA Aeronautics and we are celebrating a new year of even more milestones and accomplishments. One of those accomplishments is the completion of the X-59. It has a new coat of paint and is ready for its grand debut! Check out our Aero Crew Highlight of the month, Abigail Casas. Internship deadlines are rapidly approaching, so be sure to invite students to apply for NASA internships, challenges, and other opportunities now. Read on to find out how you can see the X-59 for the first time 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](#). For questions or 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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## **It's here! Celebrate the X-59 Roll-Out**

The X-59 is ready for the world to see and you're invited! Join us **January 12, 2024, at 1 pm PT/ 4 pm ET** for the grand unveiling. We have put together plans to help you host a Quesst Rollout Watch Party to be a part of this moment in aviation history. Send us a message at [aeroSTEM@nasa.onmicrosoft.com](mailto:aeroSTEM@nasa.onmicrosoft.com) to let us know you want to host an X-59 watch party and we'll put your party on the map—literally!

Earn an endorsement code for your flight log when you watch the rollout of the X-59. Don't have a flight log yet? Sign up now and let us alert you in your inbox about future X-59 and other flight opportunities! 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 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!

Learn more about the Quesst mission and the X-59 [here](#). And don't forget about STEM—we have loads of X-59 and STEM content including the science of sound in our [Quesst Supersonic STEM Toolkit](#).



## **The Quesst mission and the X-59**

*January 12, 2024*

The Quesst mission has two goals. The first is to build a research aircraft with technology to reduce the loudness of the sonic boom produced by supersonic flight. The second is to fly the experimental aircraft over select communities to gather data from the public and deliver that data to regulators to make informed decisions about supersonic flight over land. The first goal has been met!

Over the past five years, hard work has gone into designing and building the X-59 research aircraft. With the use of computer simulation tools, wind tunnel testing, and illustrations created by NASA supercomputers, data

## **Aeronautics Crew Highlight**

Abigail Casas, NASA Writer and Editor



Abigail Casas writes and edits publications for NASA documents and the NASA website. She is a dear friend of Orville D. Squirrel and has a shining personality that brings joy to others. Read on to learn more about Abigail's journey to NASA and her contributions to the mission.

“ I'm a writer and editor at NASA, which applies to documents and presentations as well as our NASA Aeronautics website. I've also had the honor of being NASA Aeronautics' Orville D. Squirrel during this past AirVenture 2023.

I come from a military family was born overseas in Japan but raised mostly in Virginia. I received my Bachelor of Arts in English from George Mason University. Currently, I reside in southern Maryland with my fiancée and senior dog, Daisy.

Opportunity and curiosity brought me to NASA. When the contracting company I work for won our first contract with NASA, I was added to the team and transitioned from being curious about the work to becoming passionate about its history, current projects, and its future. I knew about the space side of the agency but hadn't understood how much more there is to NASA!

Professionally, a new goal for me is to learn more about, and eventually excel at, increasing the accessibility of the products I work on. The government has mandated for better accessibility through the Section 508 Amendment to the Rehabilitation Act of 1973, and the more I learn about Section 508 best practices, the more crucial and impactful having this skill set seems to be. Personally, I'm a new homeowner, so my goal for 2024 is to fix up the house with my fiancée without letting the stress overwhelm us both. Who knew EVERYTHING is incredibly customizable?

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has been collected about how to theoretically lower the sonic boom. The X-59 research aircraft will put those theories to the test.

The X-59 is the first supersonic plane in decades that will take to the skies and allow NASA researchers to collect data on the noise produced by supersonic flight. This information will be shared with regulators who make the decision to allow or ban faster-than-sound flight over land, which has been mostly banned since 1973.

## Get to Know the Pilot

David Nils Larson

Nils Larson is an aerospace engineer and the lead pilot for the X-59 research aircraft. He holds a Bachelor of Science in astronautical engineering from the U.S. Air Force Academy in Colorado Springs. Before coming to NASA, Larson served with the U.S. Air Force where he accumulated over 7,000 hours of flight time in more than 100 fixed- and rotary-winged aircraft. He retired from the Air Force in 2007 as a Lieutenant Colonel and joined NASA as Flight Crew Branch Chief.

Stationed at NASA's Armstrong Flight Research Center, Larson has supervised pilots, navigators, UAV operators and flight engineers working on various aeronautical research projects. Today Nils Larson is the senior advisor to program directors for aeronautical flight research planning, execution, and risk management. Here he's been able to gain experience flying for NASA's Commercial Supersonic Technology project in preparation for community overflights of the X-59. To learn more about Nils Larson, check out his pilot biography [here](#).



Many of the volunteer opportunities I've had with NASA are my most favorite memories. Staffing the Aeronautics tent at the Apollo 50th anniversary on the National Mall, picking up some shifts at AwesomeCon in DC, and attending my first AirVenture (as well as my first time being in a mascot suit) - NASA has given me so many opportunities to meet amazing people and do once-in-a-lifetime things!

I'm a homebody, despite the amount of volunteering I jump at. Reading and writing, video games, even knitting (with a good audiobook, of course) are all hobbies that spark joy for me. I'm also interested in Halloween and horror, both in media/content (books, films, games) and culturally - horror often conveys metaphors or allegories for the time it's reflecting, and I find those subversions and depictions fascinating. ”



Very cool story, Abigail! Thank you for all you do for NASA and the mission towards a more equitable future. *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.

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## Virtual Opportunities and New STEM Content

### Register Today! imaginAviation 2024

Discover...Advance...Catalyze with imaginAviation!



**Last Call for imaginAviation 2024 Watch Party Registrations!**

The future of aviation innovation starts with your class! Students from kindergarten to post grad have the opportunity to engage with NASA and industry experts during our annual virtual aeronautics event, imaginAviation (Feb. 27-29, 2024). This year, we focus on how current and emerging thought leaders are becoming aviation changemakers. See all the topics that will be covered in the [imaginAviation agenda](#). There's something for every grade level!

If you would like to [register a watch party](#) for your class, we will send you a watch party planning packet to help you jumpstart your event. We look forward to seeing you online!

IMAGINAVIATION  

### NEW STEM! X-66 3D Print file

The new Sustainable Flight Demonstrator, the X-66, will help NASA focus on net-zero greenhouse gas emissions. Partnered with Boeing, the X-66 will gather data for a new generation of sustainable single-aisle passenger aircrafts. Learn more about the unique design of the X-66 [here](#). Download the [X-66 3D print file](#) designed by Boeing today.

## Student and Internship Opportunities

### NEW Opportunity! 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.

## Come See Us in Person!

### [Space Exploration Educators Conference \(SEEC\)](#)

**February 8 - 10, 2024:** Johnson Space Center presents the 30<sup>th</sup> annual SEEC conference. Educators, both formal and informal from all disciplines, will participate in hands-on STEM learning experiences. Register today and learn more about Extraterrestrial Flight with the NASA Aeronautics.

### Did you know?

**January** is National March of Dimes Birth Defects Awareness Month.  Birth defects occur in the first months of pregnancy and can be caused by various factors including genes, behaviors, and environment. Every individual is unique and it's important that everyone gets the care and support they need. Consult with your healthcare professional for support and resources about birth defects.

**January 12<sup>th</sup>** is the unveiling of the Quesst Mission's X-59 supersonic research aircraft. Join the world as NASA and Lockheed Martin Skunk Works reveal the X-59 in its new livery ready to help scientists collect data on quieter supersonic flight over land. Check out the [Quesst Supersonic STEM toolkit](#) to learn the science behind quieting the boom.

**January 15<sup>th</sup>** is Martin Luther King Jr. Day of Service. Dr. King was a civil rights leader who believed in truth, compassion, equality, and service to others. He stood for his beliefs and fought for justice and equality for all people. Use this day to give back to your community in honor of Dr. Martin Luther King Jr. Honor his belief that we are all connected in our role of building a better, more equitable future. Check your local library or community center for ways to get involved.

**January 25<sup>th</sup>** is the NASA Day of Remembrance. On the last Thursday of January, NASA takes time to remember the fallen heroes who lost their lives during the missions of exploration and discovery of

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## Internships: Deadline coming soon!

It's not too late to [apply for a NASA internship](#) for the Summer 2024 session. 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.



## Design Challenges and Grant Proposals

### 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.



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!

air and space. [Learn more about these heroes](#) and their missions to further air and space discoveries.

## In case you missed it...

### NEW Release! NASA +



**Watch it Today!** In addition to NASA TV, we now have [NASA+](#) and it has lots of new (and archived) content. Discover what NASA is all about and the many innovations and missions going on at the National Aeronautics and Space Administration. 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+.



## 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

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