



NASA Aeronautics

Monthly STEM Newsletter

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A view of the X-59 removed from the “jig” and being supported by ground supports in preparation for installation of the landing gear and other hardware required for structural testing. Image Credit: Lockheed Martin

December 2021

Here is the last issue of the NASA Aeronautics Monthly STEM Newsletter for 2021! Here in NASA Aeronautics, we are gearing up for 2022 with the overall theme of “Let’s Fly!” Why this theme? That’s because so many of our aircraft, many that have been in the making for years, are set to fly!

In preparations for flight, our education team has been hard at work getting their own projects off the ground (for some of these projects, we mean it literally!), and we’re excited to share opportunities to help you get your own projects in the air.

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? [Sign Up for the Monthly STEM Newsletter](#). Do you have a question or want to be removed from the list? Send an email to: April.a.lanotte@nasa.gov.

New K-12 STEM Items Coming Soon:

Coming Soon:

- **Flight Log Experience:** Pre-Boarding for educators and students starting **December 10th**! Our soon-to-be-released Flight Log Experience will debut on Dec. 10th. Sign up to send your name with us on our X-plane flights and start building your virtual flight log! You can even bring your entire class!! Printable boarding passes, new and existing STEAM lessons and activities (and an ELA/Social Studies lesson on the history of flight logs), videos, and the opportunity to earn special endorsement stamps and virtual mission patches are a part of this interactive program.



- **X-59 Maker Bundle:** Stay tuned—on December 17th we'll be releasing our X-59 maker bundle, just in time for Winter Break! Two new projects (and a couple of our favorites will be available in both English and Spanish for students of all ages. The bundle will include: coloring sheets for younger builders-in-training, the X-59 paper airplane template, our brand new **X-59 3D paper model**, and our **3D print file** so you can 3D print your own X-59. We can't wait to share! They will be available on the [NASA Aeronautics for Educators Facebook page](#), on our [Aeronautics@Home](#) site, and our [X-59 STEM Learning Module](#) (and anywhere else we can think of!). Bundles will be available in English and in Spanish.



- **Jr. Pilot Program (X-57):** Our second publication in the Jr. Pilot Program series for elementary students will focus on the X-57 and electric propulsion. [The first in the series](#), focused on the X-59 and the science of sound, is also being translated into Spanish. Coming in early 2022.

Engage with Aero!

Aeronautics is everywhere! Here are some of the places you can go (some in person, others virtual) to engage with us or our partners:

Advanced Air Mobility Academy (AAM Academy): Session 1 on Dec. 8, 2021! REGISTER NOW!



The [Advanced Air Academy \(AAM Academy\)](#) is a year-long series devoted to ongoing student and educator opportunities to learn more about AAM and how it will change the airspace above us.

Join in on these live events (or participate in them via recorded videos), and **apply to be an "AAM Academy Classroom of the Quarter"** to work directly with one of our AAM experts. Participation is free but you need to register!

Live Events (9-10am PT):

- Dec. 8, 2021 "Package Delivery Drone Simulation" (This event highlights a NASA Aeronautics activity that can be used to support computer science week and Hour of Code.) [Register now](#)
- Jan. 19, 2022 "The Science Behind Quadcopters"
- Feb. 25, 2022 In-person AAM Academy, West Virginia
- March 9, 2022 "Air Taxi Design Challenge"
- May 11, 2022 (9-11 am PT) AAM Middle and High School Career Day
- May 18, 2022 (time coming soon) AAM Future Workforce Seminar for post-secondary students.

Post-Secondary and Funding Opportunities:

[MUREP Precollege Summer Institute](#) NASA is seeking proposals from HBCUs and PBIs to develop a MUREP Precollege Summer Institute—an innovative experience for high schoolers. **Pre-proposal teleconference will be Dec. 1st at 3pm EST. Proposals are due Jan. 18th, 2022.**

[Student Airborne Science Activation](#) program now accepting applications for highly motivated rising sophomore undergraduate students to participate in an 8-week summer research experience. The full-time, paid internship includes a competitive stipend, housing, and travel. 25 participants will gain hands-on research experience in all components of a scientific research campaign, including flying onboard the NASA P-3 research aircraft to collect land, ocean, and atmospheric measurements. **Applications are due by Jan. 31, 2022.**

[University Student Research Challenge \(USRC\)](#): Amendment 2 to the NASA ARMD Research Opportunities in Aeronautics (ROA) 2021 NRA has been posted on the NSPIRES website.

University Student Research Challenge (solicitation [NNH21ZEA001N-USRC](#)) seeks to challenge students to propose new aeronautics ideas/concepts that are relevant to NASA Aeronautics. USRC will provide students, from accredited US colleges or universities, with grants for their projects and includes the challenge of raising cost-share funds through a crowdfunding campaign. The solicitation goal can be accomplished through project ideas such as advancing the design, developing technology or capabilities in support of aviation, by demonstrating a novel concept, or enabling advancement of aeronautics-related technologies.

Notices of Intent (NOIs) are not required for this solicitation. **Proposals for the next USRC cycle are due Feb. 24, 2022.** The due date for the third cycle is June 23, 2022.

[MAIANSE CONNECT](#) (MAIANSE CONNECTing Indigenous Culture and Science Through Co-design of STEM Ecosystems) fosters STEM Ecosystems that focus on building connections between indigenous cultures and NASA through community collaborations. Eligible institutions include Tribal Colleges and Universities (TCUs), Native American Serving Non-Tribal Institutions (NASNTIs), and Alaska Native/Native Hawaiian Serving Institutions (ANNHs), as identified by the U.S. Department of Education. **Pre-proposal teleconference will be Wednesday, Dec. 8th at 3pm EST. Proposals are due Feb. 15th, 2022.**

Professional Development:

[Educator Professional Development Collaborative \(EPDC\)](#): In the month of December, educators can “[Navigate Your Zone](#)” with block programming and UAS on Dec. 1 from 7:30-8:30pm EST, explore “[Senses of Sound](#)” on Dec. 6 from 6-7pm EST, and learn about “[Digital Badges for Educators and Students](#)” on Dec. 7 from 6-7pm EST, among others. Sessions are free, but registration is required.

[X-59 Digital Newsletter](#)

Take a look at the Fall 2021 edition of the Low-Boom Flight Demonstration Mission Inside Scoop, see imagery of the X-59’s removal from its support system, the installation of the sXternal Vision System, and more!

Did you know??

- In December of 1892 the Wright brothers open their first bicycle shop.
- Dec 1, 1935: The first airway traffic control tower is established in Newark, NJ.
- Dec. 17, 1903: Wright brothers’ first powered flight.
- Dec. 20, 1957: Boeing’s 707 first flight.



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!"

[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.

[NASA Educator Professional Development Collaborative](#): (K-12 educators) Where do you go for ongoing, free NASA educator professional development opportunities? To EPDC! Take a look at webinars, digital badging and CEU opportunities, STEM teaching tips, videos, and so much more.

[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 STEM Stars](#): (students ages 13+) Webchats that connect students ages 13+ with NASA experts of all types. Each chat introduces a STEM career, addresses a STEM topic, and highlights a NASA mission. Webchats are streamed live at 2pm EST via YouTube, and students can ask questions via the chat feature in real time. Or, you can choose from a growing library of archived sessions.

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