



NASA Aeronautics

Monthly STEM Newsletter

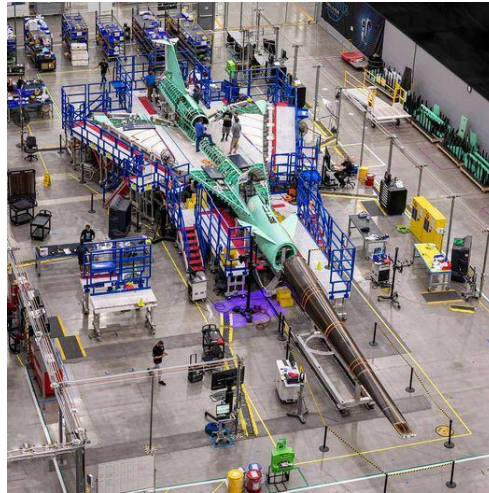
INSIDE

—
New K-12 STEM Resources

—
Post-Secondary Opportunities

—
Engage with Aero

—
AAM Academy and Safety Poster Contest



One of the many unique features of the X-59 is its long nose, which is crucial to lowering the sonic boom. The nose makes up almost a third of the aircraft's length. *Image credit: Lockheed Martin*

October 2021

Fall is in full swing, with leaves changing for those of you who live those areas, farmer's markets are in abundance, and students who are knee-deep in projects educators have carefully crafted. This also means there are lots of opportunities for educators to join in on upcoming professional development, participate in conferences both virtual and in person, and many of you are busy preparing for your own events. This month's newsletter is full of activities, events, and opportunities to support you. 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 Resources:

Aeronaut-X Educator Guides: If you haven't spent much time on NASA's [Aeronaut-X site](#), now is the time! TWO new educator guides have just been released. Below are the links and short descriptions about the innovative activities they offer.

- **[Unmanned Aircraft Systems Educator Guide](#):** Geared towards students in grades 5-8, this guide contains different activities that focus on the future of unmanned aircraft systems (UAS), such as propeller design, programming, problem solving, and navigation.
- **[Robotic Search and Rescue Challenge](#):** Also created for students in grades 5-8, the search and rescue challenge asks students to work in teams to use a programmable robot to design solutions and simulate an unmanned aerial vehicle (UAV) entering a disaster zone.

Post-Secondary Opportunities:

The [NASA Aeronautics University Design Challenge](#) for the 2021-2022 academic year is now available. This year's NASA-sponsored challenge, focusing on the use of Urban Air Mobility/Regional Air Mobility vehicles in a firefighting scenario, challenges students representing multiple disciplines to test their skills while designing and building solutions to real-world problems.

Through NASA's ["Gateways to Blue Skies: Airports of Tomorrow Challenge,"](#) college and university teams develop and share design ideas for the evolving airports of 2050. NOIs are due Oct. 25th and submissions are due March 3, 2022. Finalist teams receive a \$6,000 cash award to participate in the 2022 Blue Skies Forum at NASA's Langley Research Center in Hampton, VA.



[University Student Research Challenge \(USRC\)](#): The USRC challenges students to propose new aeronautics ideas and concepts relevant to NASA Aeronautics. USRC provides students grants for their projects. 3-page proposals for the next cycle are due Nov. 11, 2021.

Engage with Aero!

If you haven't noticed already, aeronautics is everywhere! Here are some of the places you can go (some in person, others virtual) to engage with us or our partners:

Oct. 6, 2021: Smithsonian National Air & Space Museum. ["Working Toward Greener Skies"](#) lecture, 8-9pm EST (Virtual). RSVP req'd.

Oct. 7-10, 2021: NASA Aeronautics booth at [NY ComicCon](#)

Oct. 15-16, 2021: [NASA Makes!](#) Collaborative, virtual educator mini-institute hosted by NASA and Maker Ed (free, RSVP required).

Oct. 18-24, 2021: [SciFest All Access](#). NASA Aeronautics booth (virtual).

Oct. 21-23, 2021: [California STEAM Symposium](#). ["Explore Flight with NASA: Aeronaut-X"](#)

Nov. 6, 2021 [Colorado Science Conference](#). "Exploring Sound and the X-59 with NASA Aeronautics." 1:05-1:55pm MST (virtual)

November 13, 2021: [National Science Teaching Conference \(NSTA\): National Harbor, MD](#) ["Transforming the STEM Classroom with NASA and Literacy,"](#) 9:30-10:30am (in person).

Student Opportunities:

The [STEM Gateway Spring Internship](#) application window is open October 1st through Nov. 6th, 2021 for Spring 2022 internships. NASA seeks many different students with a wide variety of skillsets (not just engineering students).

Professional Development:

[Educator Professional Development Collaborative \(EPDC\):](#)

Aeronautics, Enhancing STEM Engagement, Digital Badges and more! Join NASA's EPDC for a month full of aeronautics-related professional development. "Explore Flight with NASA Gliders" on Oct. 6th and learn more about "Resources to Enhance Student Engagement" on Oct. 4th, both from 4:30-5:30pm ET. Sessions on exploring flight with simulations, the science of sound in relation to aeronautics, and more are also available. Sessions are free, but registration is required.

AAM Academy and AAM Safety Poster Contest:

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. A link will be available soon, but stay tuned to us via our NASA Aeronautics for Educators Facebook page for updates:

The [AAM Safety Poster Contest](#) is open to all 6-12th grade students! Entries are due by Oct. 15.



Live Events (9-10am PT):

- Nov. 3, 2021 "Flight Control Math 1"
- 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.)
- Jan. 19, 2022 "The Science Behind Quadcopters"
- March 9, 2022 "Air Taxi Design Challenge"
- May 11, 2022 (9-11am PT) AAM Middle and High School Career Day
- May 18, 2022 (time coming soon) AAM Future Workforce Seminar for post-secondary students

K-12 classrooms, join in on these live events (or participate in them via recorded videos), and you can apply to be an "AAM Academy Classroom of the Quarter" and work directly with one of our AAM experts. More details coming soon!

Did you know??

- On October 11, 1910, President Teddy Roosevelt became the first US President to fly when he was taken up in an airplane in St. Louis.
- On October 14, 1947 Charles "Chuck" Yeager became the first person to fly faster than sound and broke the sound barrier in the Bell X-1.

(Find out more about Aviation History Facts for October [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!"

[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 program 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.

National Aeronautics and Space Administration

Headquarters
300 E. Street, SW
Washington, DC 20546

www.nasa.gov/aeroresearch