NASA Aeronautics

August 2022
No. 16

Monthly STEM Newsletter

INSIDE

NASA participated in thee EAA's Air Venture 2022 event in July of 2022. Over 650,000 people attended the week-long event. Photo credit: NASA/April Lanotte

August 2022

The sounds of aircraft engines gearing up for airshows, high school marching bands practicing for the start of the fall season, and final preparations being made for the start of the academic year are well underway, NASA Aeronautics is working to help educators of all types prepare for a successful and exciting 2022-2023 year. New lessons, activities, and STEM Toolkits are now available with more to come. A newly released funding opportunity, a design challenge, and lots more can be found in this newsletter. Also, keep an eye on us during Aero August! Each of NASA's Aeronautics-focused Centers are sharing a bit extra about the work we do.

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 our monthly STEM newsletter. Have questions or want to be removed from the list? Send an email to April.a.lanotte@nasa.gov.

Let's Fly!

Newly Released STEM Items:

New! 2022 Virtual STEM Toolkit

Initially created to support the Choctaw Nation of Oklahoma's STEM programs, the 2022 Virtual STEM Toolkit is a comprehensive guide to K-12 STEM at NASA. An overview of K-12 STEM at NASA, highlights of key STEM content for each of our Mission Directorates, and links to materials broken down by grade band and by topic can be found in this guide. It's a great place to start when looking for engaging content that meets your specific needs.

Coming Soon on National Aviation Day (Aug. 19th)! QueSST Supersonic STEM Toolkit

The second of three NASA Aeronautics STEM Toolkits, The Quesst Supersonic STEM Toolkit pulls together K-12 STEM resources related to our X-59 supersonic aircraft in development along with materials that cover the science of sound. Like the Sustainable Aviation STEM Toolkit, the new toolkit contains a compilation of NASA STEM materials related to sustainability and flight. Hands-on activities for K-12 students, videos, games and puzzles, as well as education guides to provide a better understanding of what our quest for quieter supersonic transport means here at NASA Aeronautics. The toolkit includes:

- 3D printing files

Engage with Aero!

Summer and early fall is airshow season, and NASA is busy supporting a reinvigorated flight season as some airshows are back after the pandemic. Here are two of the larger airshows we'll be a part of:

August 19th, National Aviation Day!

More details to come, but we always plan a great celebration for National Aviation Day, including the release of our Quesst Supersonic STEM Toolkit. What are you planning??

Oct. 6-8, 2022: AISES National Conference

Oct. 15-16, 2022: Aerospace Valley Open House, Air Show, and STEM Expo 2022

For the first time since 2009, the Edwards AFB air show is back, and larger than ever. Coinciding with the 75th anniversary of supersonic flight, the STEM Expo, USAF Thunderbirds flight demonstration, airshow, and open house will be free to the public. Join NASA, the Air Force, and others at Edwards Air Force Base in CA if you can!

**Please note that the events are currently scheduled as in-person events but could change due to COVID restrictions.*

- Leveled Readers highlighting NASA subject matter experts focusing on sound and flight safety
- Activities in English and Spanish
- Desktop X-59 model

New! NASA's Advanced Air Mobility Playbook: Infrastructure

NASA's vision for Advanced Air Mobility, or AAM, is to map out a safe, accessible, and affordable new air transportation system alongside industry partners, community partners and the FAA. New infrastructure for AAM will have to be built and current infrastructure will need to evolve to support this new transportation system. In this episode of NASA's Advanced Air Mobility Playbook, ATM-X Deputy Project Manager Shivanjli Sharma explains how NASA is helping to develop new infrastructure solutions, both physical and digital. You can also read more about it here.

New! "The Quiet Crew" featuring Larry Cliatt

Meet Sonic Boom Technical Lead Larry Cliatt and learn about his role on the Quesst mission, leading acoustic validation, as well and his love of Legos!

NASA TechRise Design Challenge: Students in grades 6-12 are invited to design experiments that could be selected to fly on a NASA high-altitude balloon flight. Selected teams receive technical support during the experiment build phase: no experience necessary! Entries are due Oct. 24, 2022.

NASA's Gateways to Blue Skies: Clean Aviation Energy Competition:

In the push toward net-zero emissions by 2050, NASA seeks to crowdsource ideas for potential new clean aviation energy sources. Through the 2023 Blue Skies Competition, teams of two to six students will conceptualize and analyze the climate impacts along the source-to-flight lifecycle of one potential, primary clean aviation energy source of the future, and create a five- to seven-page research proposal and two-minute video summary. Finalist teams will receive a $6,000 stipend to participate in the 2023 Blue Skies Forum at a NASA center in

Did you know??

August 1, 1929: Dr. Hugo Eckener commands the first airship flight to circumnavigate the globe.

August 2, 1911: Harriet Quimby is the first female in the US to earn her pilot's license.

August 18, 1929: The first women's air derby is held in the US. Louise Thaden is the winner.

August 19, 1871: Orville Wright is born in Dayton, OH.

August 1917: Eugene Jacques Bullard became the first black military pilot in history and the only black pilot in World War I.

June 2023. Winners are eligible for NASA internships in the academic year following the competition. **Notice of Intent Deadline: Oct. 17, 2022. Submission Deadline: Feb. 28, 2023.**

Funding and Internship Opportunities:

The **NASA Teams Engaging Affiliated Museums and Informal Institutions TEAM II Community Anchor Awards Notice of Funding Opportunity** is now open. An optional **pre-proposal webinar will be held Aug. 11, 2022. Full proposals are due Oct. 18, 2022**, with individual awards ranging from $35K-40K.

Spring 2022 Internship applications are now open (yes, really)! The deadline for Spring internships are Nov. 11, which will be here before we know it, with the spring session beginning Jan. 17th, 2023. *Please note that NASA Internships has recently migrated to a new application system. Previous applicants need to renew their passwords and update profiles before applying for an opportunity.*

Professional Development:

Educator Professional Development Collaborative (EPDC): Is your classroom ready? Do you even have a physical classroom anymore? Either way, we have you covered with lots of professional development available for you. August virtual professional development includes: August 15th "Aeronaut-X: Propeller Design Challenge" "and two sessions on Aug. 23rd: "Explore Flight: Four Forces of Flight" and "Explore Flight: NASA's DAVINCI+ and Dragonfly" . Sessions are free, but registration is required.

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.

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.

National Aeronautics and Space Administration

Headquarters
300 E. Street, SW
Washington, DC 20546

www.nasa.gov/aeroresearch