



# NASA Aeronautics

## Monthly STEM Newsletter

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## April 2022

"Dream with Us" this spring, as we look ahead to a summer full of activities, new NASA Aeronautics flights, and summer camps, activities, and opportunities. This issue of the monthly NASA Aeronautics STEM Newsletter includes a funding opportunity, reminders about our current design challenges and our Flight Log, along with a look ahead at a variety of ways you can interact with us both in person and virtually.

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](mailto:April.a.lanotte@nasa.gov).

Let's Fly!

## Newly Released STEM Items:

**Flight Log:** Newly released Flight Log Experience! Educators, classrooms, aviation enthusiasts—sign up to send your name with us on our X-planes, UAS flights and more while you begin to build your virtual NASA flight log. Educators—bring your entire class!

- Access STEM lessons and activities, videos, and other resources
- Earn virtual endorsement stamps and mission patches
- Participate in our flights and other experiences, and hear from our [Lead Test Pilot Nils Larson](#).



- **Now open: “Dream with Us” design challenge:** The [“Dream with Us” challenge](#) is asking students in grades 6-12 to help NASA envision innovative solutions to three real-world aeronautical challenges by submitting an original art piece capturing their ideas. The three aeronautical challenges are drone use, future airports and vertiports, and new sustainable aircraft designs. Submissions can take the form of several mediums – including, but not limited to, digital art, models, comic books, essays, or stories – that depict their solution, along with a written explanation of how it works. Winners will earn the opportunity to have a NASA subject matter expert present to their classroom or school, as well as certificates or other materials, and could even have their work publicly displayed on NASA Aeronautics’ website and social media accounts.

**Challenge dates: March 1-May 31, 2022.**

*\*If you are participating in [Flight Log](#), this event earns you a Dream With Us endorsement code.*

## 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:

### March 31-April 2, 2022: [NSTA Houston 22:](#)

If you are at the NSTA Houston 22 conference, be sure to check out NASA workshops, and our booth.

### April 22-24, 2022: [NASA in Your \(TX\) Neighborhood!](#)

Join NASA Aeronautics in Texas April 22-24, 2022 for a series of educator, student, and public events focused on our X-59 aircraft, career and workforce development, and the science of sound. Hear from NASA researchers, pilots, STEM experts, and other experts in Texas as we share the story of the X-59.

- April 22-23: UT Arlington (Students, professors, K-12 educators: space is limited, [registration](#) is required.)
- April 24: [Frontiers of Flight Museum](#) (Open to everyone! No registration needed.)

### April 22, 2022: [NASA Earth Day 2022 \(hybrid event\)](#)



[Sign up now](#) for a free, live Earth Day Celebration on April 22, 2022 (open on-demand through May 2, 2022). Join us for talks, games, chat opportunities with a scientist, and more.

- **Deadline Approaching! [ATM-X Digital Information Platform University Challenge](#):** The National Airspace System (NAS) is investing in new ways to bring vast amounts of data together with state-of-the-art machine learning to improve air travel for everyone. An important part of this equation is *airport configuration*, the combination of runways used for arrivals and departures and the flow direction on those runways. **The goal of this challenge is to automatically predict airport configuration changes from real-time data sources including air traffic and weather. Submissions are due April 15<sup>th</sup>, 2022.**

### **New! [Advanced Air Mobility Playbook: Automation](#)**

NASA's vision for Advanced Air Mobility (AAM) is to map out a safe, accessible, and affordable new air transportation system alongside industry partners and the FAA. An important aspect of AAM is the development of automated systems and operation, which will allow vehicles to fly safer and more efficient. In this episode of NASA's Advanced Air Mobility Playbook, Deputy Project Manager of Technology Kenneth Goodrich explains some of the research and key components of [automation](#).

### **Funding Opportunity:**

The [NASA SG KIDS](#) solicits proposals from the 52 Space Grant Consortia that will form a regional approach to formal or informal, hands-on, and experiential learning activities that are NASA-aligned for middle and/or high school students.

REQUIRED Notices of Intent (NOIs) due Thursday May 5, 2022 at 11:59pm ET.

FULL PROPOSALS are due Tuesday May 31, 2022 at 11:59pm ET.

### **Professional Development:**

#### **Educator Professional Development Collaborative (EPDC):**

You always work hard, and we do, too. Professional development opportunities are always available at NASA. In addition to the in-person professional development sessions at the NSTA National Conference in Houston, TX this month, the month of April allows educators to participate in an April 4<sup>th</sup> session about [virtual learning opportunities and digital badging for educators and students](#), [Aeronaut-X: 3,2,1...Takeoff!](#) on April 11<sup>th</sup>, among others. Sessions are free, but registration is required.

### **July 25-31, 2022: AirVenture 2022**

If you've ever been to [AirVenture](#), you know that camping is a fun part of the experience for some. And wow, does NASA have a tent for you! Join us at AirVenture for lots of exhibits, a STEM Zone, and so much more, we can't even list it all!! **\*If you are participating in [Flight Log](#), this event earns you an AirVenture endorsement code.**

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

### **Advanced Air Mobility Academy (AAM Academy):**



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 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!

**[Access archived recording and presentation materials here.](#)** These include:

- "Package Delivery Drone Simulation"
- "The Science Behind Quadcopters"
- "AAM Academy Live"

#### **Upcoming Sessions:**

- 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.

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## Did you know??

April 5, 1907: Aviation pioneer Louis Bleriot completed his first flight using his tailless pusher monoplane in Bagatelle, France. Named the Canard, his monoplane was powered by a 24-horsepower Antoinette engine.

August 1, 1911: Harriet Quimby becomes the first American and the world's seventh woman to earn a pilot's license. On April 16, 1912, she was the first woman to fly solo across the English Channel.

April 1987: NASA began flight testing the [F-18 High Angle-of-Attack](#) (Alpha) Research Vehicle. The aircraft completed three phases of testing, which included 385 flights that successfully demonstrated angles of attack between 65 and 70 degrees.



### 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.