



NASA Aeronautics

April 2024
No. 35

Monthly STEM Newsletter

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This image of the Aug. 21, 2017, total solar eclipse was taken from Madras, Oregon. Credit: NASA/Nat Gopalswamy

April 2024

April showers are headed to various places this month and so are we, Aeronauts! Enjoy the rain and celebrate Earth Month. NASA looks out for planet Earth with missions to help preserve and protect her. Speaking of looking out, look out for a total solar eclipse on April 8th. Check out our Aero Crew Highlight of the month, Orville D. Squirrel, our flight ambassador who promotes STEM and a greener tomorrow with greener aviation. Don't miss the Dream with Us design challenge deadline at the end of this month--get your team(s) together and submit your projects before the end of April. New student internship projects are available and don't miss your chance to apply for challenges and other opportunities. Learn more about 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 good news and [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 or holly.o.gutierrez@nasa.gov.

Earth Day

April 22, 2024

Earth Day comes every year on April 22nd. Although there is just one Earth Day, the month of April is a time to raise awareness of environmental issues that affect our home planet.

In 1970 Senator Gaylord Nelson of Wisconsin created Earth Day to force lawmakers and congressmen to take action to protect earth. Although he had the passion to make changes to protect the earth, the senator couldn't do things on his own.

Senator Nelson needed help to bring awareness to the country. He recruited activist Denis Hayes to help organize campus and public events. April 22nd was chosen because it fell between spring break and final exams for university students, allowing better flexibility for student participation. Hayes recruited a staff of volunteers to lead demonstrations throughout the country helping to bring to light the need for action against lax environmental rules and regulations. Due to Senator Nelson's and Hayes' passion, they inspired over 20 million Americans to demonstrate against the actions of industrial development that led to poor climate and Earth conditions. After many public demonstrations and the determination of dedicated citizens, the government formed the U.S. Environmental Protection Agency (EPA) to help tackle environmental issues.

Since then, the EPA has worked to ensure there is clean water, land, and air. All around the world people have marked this month as a time to be conscious of the environmental impact humans make on this planet. Various groups bring awareness to the human carbon footprint that can affect Earth without us knowing we are doing harm. The creation of the EPA paved way for other environmental laws such as the clean water act, clean air act, National Environmental Education Act, and the Occupational Safety and Health Act.

Earth is our home planet, and it's up to all of us to help her thrive for generations to come. Join NASA this month in looking after the earth. Check with your local library and community centers on ways you can reduce your carbon footprint.

Aeronautics Crew Highlight

Orville D. Squirrel, NASA Aeronautics Ambassador



Orville D. Squirrel is the official STEM Ambassador for everyone who is part of NASA's aeronautics research programs. He travels around the United States sharing the excitement and benefits of NASA's work to transform aviation for the 21st century. Read on to learn more about Orville.

“Hello, everyone. My name is Orville. I am a flying squirrel, part of the scientific tribe known as Pteromyini. Members of my family have served as ambassadors for NASA's Aeronautics Research Mission Directorate for a very long time. I am proud, happy, and thrilled to be the current representative of everyone who is part of the second 'A' in NASA, which stands for Aeronautics.

As a flying squirrel, it's only natural that I represent the NASA Aeronautics family. I know all about flying. Well, maybe gliding is more accurate. Unlike other types of squirrels, I have a furred skin membrane that goes all the way from my wrists to my ankles. When I leap from the top of a tree, I can stretch out that extra skin and catch the wind so I can glide. Just like an airplane, my tail helps provide stability. It's a pretty cool way to get around.

So how did I wind up working for NASA? My family has lived in coastal Virginia for a very long time. Way back in December 1903, my ancestor Samuel was hunting for food to store for the approaching winter. He was sitting atop a giant tree and spotted something good to eat in a neighboring tree. It was right on the edge of how far he thought he could fly to reach it. He decided to go for it and jumped as hard as he could.

It was a blustery fall day. So windy, that when Samuel was in the air a huge gust suddenly took him higher and farther than he had ever flown

NEW K-12 Opportunities and Resources! **2024 Dream with Us Design Challenge**

OPEN NOW! Closes April 30th, 2024



The 2024 [Dream with Us design challenge](#) closes **April 30, 2024!** For students ages 13-18, this team-based challenge gives students a chance to share their vision for the future of aviation with NASA experts. This year's theme is focused on natural disasters--students are developing new and improved ways aviation can help with natural disaster response.

Sign up to join us for virtual learning sessions to find out more about the Dream with Us challenge and how to apply through NASA's STEM Gateway.

Educator session: April 15, 2024 @ 7pm ET
Sign-up form: <https://forms.gle/1PnfoVQtpdhHgyQp7>

Student session: April 17, 2024 @ 2pm ET
Sign-up form: <https://forms.gle/FDuuULyeBc3enPLE7>

Students may attend the student session independently or educators can bring whole groups to learn more and ask questions. Use the [educator session form](#) or [student session form](#) to sign up. Session links will be posted on the 2024 Dream with Us challenge [page](#).

Challenge submissions will be accepted **March 1 - April 30, 2024**. Learn more about the challenge and NASA's ACERO project on [the Dream with Us Design Challenge webpage](#).

NEW! STEM Activity **X-66 Jr. Pilot Program**

The Jr. Pilot program helps K-5 learners understand the work of NASA's new experimental aircrafts using STEM activities and puzzles. The *NEW* X-66 Jr. Pilot

before. By the time he was able to glide to a safe landing, he found himself on a beach in North Carolina. Before him was a device of some sort. There were two long panels, one above the other, that were slightly curved in a way that reminded him of the shape of a bird's wings. Smaller "wings" were placed in front and another set, twisted so they were straight up and down, were attached behind. Being a flyer himself, he could imagine that he was staring at a giant bird made of wood, fabric, and metal wires. 'You know, if this thing were to get moving fast enough it just might take off,' Samuel thought to himself.

Yup. That's right. My distant grandpa landed right in the middle of the Wright Brothers getting ready to make the first powered airplane flight in history. He was so amazed by what he witnessed that he was determined to be a part of this new adventure in flight. In fact, every family member from then on was named after famous pilots. I was named for Orville, who was pilot on the first flight at Kitty Hawk.

A few years later, in 1915, the National Advisory Committee for Aeronautics was created as the home for the nation's aviation research efforts. (This organization in 1958 became the basis from which NASA was created.) Its first laboratory - known today as the Langley Research Center - opened in 1917 right in Samuel's backyard in Virginia. From then on, Samuel and his descendants enjoyed a front row seat watching aviation develop. In addition to being NASA Aeronautics' smallest fans and biggest cheerleaders, our expertise in gliding has come in handy to NASA engineers several times throughout history. These adventures remain family legends, at least for now.

The most important thing to know about me is that I love what I do. It's so exciting to travel around the country and meet people who are as interested in aviation as I am. The best times are when I can help my friends at NASA Aeronautics talk about what they are doing to enable new options for safe air travel that are more accessible, faster, and sustainable than ever before.

If we should ever run into each other, feel free to say hello and pose for a selfie. Or you can print out a [picture of me](#) and take me on your travels! ”

book has STEM activities all about sustainable aviation. The X-66 is part of NASA's Sustainable Flight Demonstrator project. Its new design, materials, and technology will help NASA gather data towards a future with zero emissions. Have a successful start to Earth Month by checking out the sustainable flight edition of the Jr. Pilot Program [HERE](#). A Spanish version is in development and will be available soon!

In Development

Wildfire STEM Toolkit: *We need your help!*



NASA Aeronautics is a part of the agency's Wildland Fire Management Initiative to help prevent, predict, and manage wildland fires. We are gathering information from educators like you to make sure we add what you need to an educator's toolkit. Help us out by completing the survey, which can be found [HERE](#).

Post-Secondary Student and Internship Opportunities

NEW! University Leadership Initiative (ULI)

The University Leadership Initiative (ULI) is a collaboration between NASA Aeronautics Research Mission Directorate and university student programs to create new innovative ideas for current NASA projects and the future of aviation. To learn more about ULI's Round 8 of opportunities, register [HERE](#) to attend the workshop on **April 3, 2024, from 1 - 3 pm ET**. Submit your Round 8 proposals by **May 29, 2024** through [NASA NSPIRES](#).

Professional Development

Come See Us in Person!

Join NASA for Solar Eclipse events on April 8th.

[Great Lakes Science Center](#)

Cleveland, OH on April 6 - 8, 2024: Join the Total Eclipse Fest 2024 hosted at the Great Lakes Science Center in partner with NASA Glenn Research Center. This three-day event will feature hands-on activities, performances, speakers, and more.

[Indy Motor Speedway](#)

Indianapolis, IN on April 8, 2024: Head to the Indiana Motor Speedway to see the total solar eclipse with NASA. Engage in STEM activities, racing cars, and other happenings throughout the day.

[Louise Hays Park](#)

Kerrville, TX on April 8, 2024: The Kerrville Parks and Recreation Department are partnering with NASA to host The Kerrville Eclipse Festival. Enjoy live music, children's programming, and more than 4 minutes of totality during this event.

Virtual Opportunities

[NASA Dream with Us Design Challenge](#)

Virtual Educator Info Session: April 15, 2024 @ 7pm ET Learn more about the Dream with Us Design Challenge and its real-world applications. Learn how this challenge can support you and your students in both formal and informal learning environments. Use [this form](#) to tell us you plan to attend an educator learning session. The session link will be available on the challenge [page](#).

Virtual Student Info Session: April 17, 2024

@ 2pm ET Learn more about the Dream with Us Design Challenge and how to apply through NASA's STEM Gateway platform. Educators may bring whole groups or

Deadline April 5th! NASA Internships

[Apply for a NASA internship](#)

including multiple opportunities within the Aeronautics Research Mission Directorate for the Fall 2024



session (an [Aeronautics STEM Educator](#) and an [Aero Communications Intern](#)). Find STEM and non-STEM projects at various NASA centers that offer in-person, virtual, and hybrid opportunities. Whatever you are interested in studying, NASA has a place for you! Get your application in by **April 5, 2024**, and join NASA experts this fall to find solutions, create new innovations, and break barriers towards a brighter future.

NEW! Advanced Air Vehicles Program Fellowship

NASA Aeronautics is seeking proposals from accredited US institutions for research training grants to support independently-conceived research projects by highly qualified graduate students to help advance NASA's mission.

[Proposals](#) are due **April 30th, 2024**.

Design Challenges and Grant Proposals

Next round opening soon! University Student Research Challenge

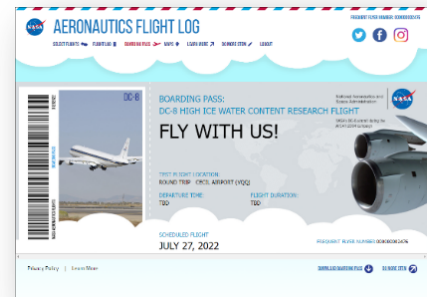


Join the [NASA University Student Research Challenge](#) family and collaborate with peers to contribute to the evolving field of aeronautics! NASA is seeking creative ideas and concepts

students may attend independently. Use [this form](#) to tell us you plan to attend a student learning session. The link to the session will be posted on the Dream with Us [page](#).

Sign up, today! Flight Log

Sign up for Flight Log today and get notifications on new upcoming flights straight



to your inbox. Earn an endorsement code for your flight log when you complete activities and join NASA Aeronautics STEM engagements online and in-person. 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!

NASA CONNECTS: Are you interested in other professional development opportunities? Create a new account or log in to find a session that interests you.

Did you know?

April is National Kite Month. Celebrate by using one of NASA's kite activities to make your own kite and fly it on an awesomely windy day. [Build a tetrahedral kite](#), learn how kites teach learners about the [principles of flight](#), and more. Check your local library or community center to find out if there are any kite festivals to join other kite flying enthusiasts.

April 5th is National Peeps Day. That's right, the colorful, sugar-coated marshmallows have their

relevant to NASA Aeronautics from interdisciplinary student teams.

- Receive up to \$80,000 to pursue your ideas
- Gain technical and entrepreneurial experience
- Open to all majors and interdisciplinary teams (engineering, business, etc.)
- Interface with NASA experts and receive exposure to the aerospace industry

The solicitation window for this round is closed but stay tuned for more information for the next round when proposals are due **June 20, 2024**.

own day! Here at NASA Aeronautics, we not only love to eat Peeps, but we love to use them for science. Check out the [High-Flying Peeps: Designing a Pressure Suit activity](#) to learn about the pressures of altitude and how aircraft and space suits protect pilots and astronauts from the dangers of high flying.

April 8th will feature a total solar eclipse that will pass through various parts of the United States. A total solar eclipse is when the moon passes between the sun and earth completely blocking out the sun. Learn more about the eclipse [HERE](#).

April 26th is World Pilot's Day. Celebrate their contribution to aircraft safety and innovation. Learn more with [NASA's Flight Log](#) program about the pilots and crew that pioneer the future of aviation through research and unwavering dedication.

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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