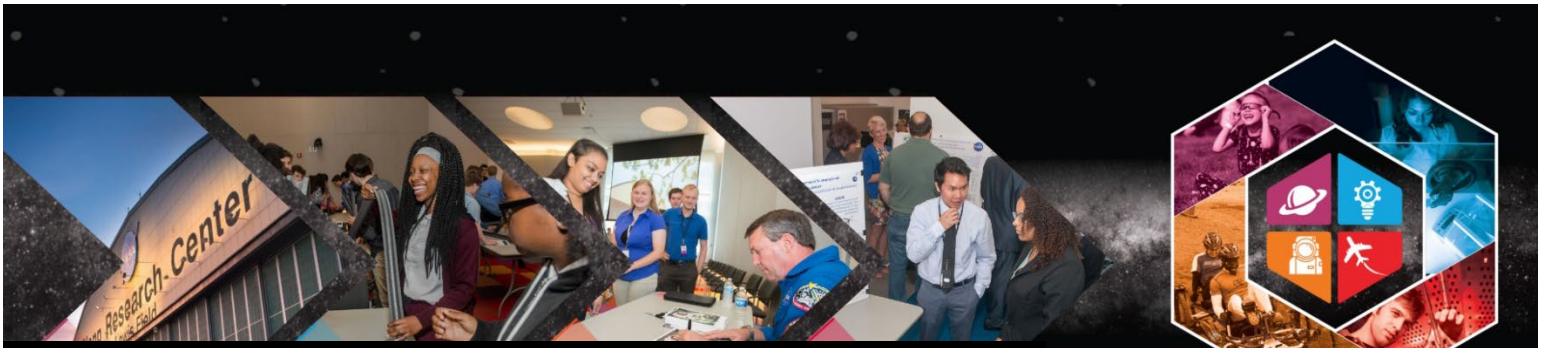

Spring/Summer Edition
2022 Opportunities Offered by NASA Glenn's Office of STEM Engagement

INSPIRE · ENGAGE · EDUCATE · EMPLOY
The Next Generation of Explorers

NASA's Glenn Research Center K-12 Student Virtual Events

Glenn High School Internship Project (GHIP) – Virtual Summer Session
Session Dates: ***June 13 – August 5, 2022***
Application Deadline: March 18, 2022
Audience: Students in grades 10-11
Point of Contact: Cathy Graves
Contact: GRC-Intern@mail.nasa.gov
Application Website: https://intern.nasa.gov/

The Glenn High School Internship Project provides paid summer internship opportunities to students interested in careers in science, technology, engineering, mathematics (STEM) and professional administration. GHIP engages students in an intensive internship experience while in a research and development environment under the guidance of a Glenn scientist, engineer, technician, or administrative professional who serves as the student's mentor. The project expands the student's understanding of possible career choices available at NASA. The schedule includes oral presentations and a variety of enrichment activities. Internships are 8 weeks in duration for 40 hours per week.

Eligibility Requirements:

- The applicant must be a U.S. citizen and 16 years old at the time of application (going into their junior or senior year)
- The applicant must be a current sophomore or junior at the time of the application
- The applicant must have a minimum cumulative GPA of 3.0 on a 4.0 scale
- The applicant must be available on a full-time basis (Monday through Friday, 40 hours per week) from June 13, 2022 through August 5, 2022

High School Shadowing Day
Event Date: ***April 7, 2022 from 10 a.m. to 12 p.m. Eastern Time***
Audience: Students in Grades 9-12
Registration Available: November 19, 2021 – March 11, 2022
Point of Contact: Jeresha Nixon
Contact: GRC-Ed-Opportunities@mail.nasa.gov

The High School Shadowing Program allows participants to explore career opportunities in science, technology, engineering, and mathematics as well as business. Through Shadowing Day, participants experience life at NASA Glenn. Participants spend time shadowing a NASA Glenn scientist, technician, engineer, or business professional; virtually tour some of NASA Glenn's unique facilities; and receive information about NASA's other STEM resources and programs. Opportunities are limited and will be based on the participant's expressed interests, and the mentors' availability.

Power to Explore
Event Date: ***May 24, 2022***
Audience: Students in Grades K-12
Registration Available: February 15 – April 13, 2022
Contact: support@futureengineers.org

When you see a beautiful image of Pluto, do you ever stop to think about how long it takes to get there and what kind of energy would power a spacecraft to take those pictures? It takes a special kind of power to gather data at the extremes of our solar system, and now, as we celebrate 60 years of nuclear power for space flight, NASA wants to hear about what energizes YOU!

If you are a K-12 student in the United States, your challenge is first to research Radioisotope Power Systems (RPS), which is a type of nuclear battery, and then write about:

- one or more uses of this special power system in space that inspires you (refer to the BRAINSTORMING section below for examples, from providing power in dark places like a shadowed crater to powering spacecraft that go beyond our solar system), and
- what you think your unique power is and tell us how your special power will help you achieve one or more long-term goal(s) in your life

In total, your submission is limited to 200 words. You must also include a title up to 75 characters which will not be included in the word limit.

NASA STEM Kids Virtual Event – Airplanes: Flight Expedition
Event Date: ***May 14, 2022 from 10 a.m. to 11:30 a.m. Eastern Time***
Audience: Students in Grades K-4
Registration Available: March 14 – April 14, 2022
Point of Contact: Jeresha Nixon
Contact: GRC-Ed-Opportunities@mail.nasa.gov

Kindergarten to fourth graders can venture with NASA Glenn virtually to learn about the center's role in aerospace. Students will take a virtual tour of a NASA facility, engage in conversations with NASA experts, and participate in a live hands-on STEM activity during the event. Due to software limitations, the event will be limited to the first 180 registrations received.

NASA STEM Kids Virtual Event – Orbiting the Sun
Event Date: ***August 20, 2022 from 10 a.m. to 11:30 a.m. Eastern Time***
Audience: Students in Grades K-4
Registration Available: June 21 – July 22, 2022
Point of Contact: Jeresha Nixon
Contact: GRC-Ed-Opportunities@mail.nasa.gov

Kindergarten to fourth graders can venture with NASA Glenn virtually to learn about the center's role in space research. Students will take a virtual tour of a NASA facility, engage in conversations with NASA experts, and participate in a live hands-on STEM activity during the event. Due to software limitations, the event will be limited to the first 180 registrations received.

Future Upcoming Events to Be Released

Registrations are anticipated to open two months prior to event date and close one month prior to event date.
TECH Day at NASA Glenn: May 12, 2022
Girls in STEM: July 14, 2022
Aviation Day at Glenn: August 25, 2022

Glenn Research Center Educator Professional Development Opportunities

NASA STEM Educator Professional Development Collaborative
Audience: Ohio K-12 School Educators
Point of Contact: Gerald Voltz
Contact: gerald.w.voltz@nasa.gov
NASA Glenn Research Center is interested in providing curriculum support to schools seeking an Ohio STEM designation. Utilizing the NASA STEM Educator Professional Development Collaborative (EPDC), an EPDC Specialist will assist schools in infusing inquiry-based hands on STEM Instruction throughout all content. The NASA STEM EPDC is a national educator professional development system composed of and designed to serve STEM educators at all levels including K-12 educators, pre-service teachers, higher education faculty and informal educators. The EPDC provides professional learning experiences and resources to thousands of educators per year using integrated delivery mechanisms for Online Educator Professional Development and Community-Requested Educator Professional Development.

Glenn Research Center Sustained Student Experiences

Engineering Design Challenges
Point of Contact: Gerald Voltz
Contact: GRC-Ed-Opportunities@mail.nasa.gov

Engineering design challenges are an integral part of educational content where students have the opportunity to work on real-world challenges in a collaborative, team-based environment, applying the lessons learned to the technical problems of the workplace. NASA Glenn Research Center Engineering Design Challenges (EDCs) will connect local Ohio students, at both in-school and out-of-school settings, with the unique challenges faced by NASA scientists and engineers as they design the next generation of aeronautic and space vehicles, habitats, and technology.
Engineering Design Challenges Include:

- A main challenge problem that the scientists and researchers at Glenn are currently studying.
- Supporting science investigations that go deeper into the content and align directly with the Next Generation Science Standards (NGSS).
- Live virtual connections to NASA Subject Matter Experts (SMEs) where participants can discuss their challenge solutions and the SMEs' work at NASA.
- Opportunities for student teams to submit their solutions to the challenge problem to the NASA Glenn Office of STEM Engagement in the form of a slide presentation or video presentation.
- Virtual and in-person professional development for facilitators to learn how to conduct the challenges in their own settings.

NASA Glenn has developed the following EDCs:

- **Keep it Cool** - Design, test, and improve systems to maintain cold temperatures within a simulated cryogenic propellant tank.
- **Spacecraft Safety** - Design and build a model of a spacecraft that can safely transport two astronauts on a mission to the Moon, Mars, or other destinations in space.
- **Powered and Pumped Up** - Design and build a lightweight solar-powered pumping system that can move water as quickly as possible between two storage tanks.
- **Let It Glide** - Design and improve a glider made out of a shoebox that demonstrates the best glide properties when thrown.
- **Gaining Traction on Mars** - Design a set of wheels for a Martian rover that performs best on a simulated extraterrestrial soil bed.

Make it NASA

Workshop Offered: May 18 & 20, 2022
Implementation Dates: May 23 – August 31, 2022
Audience: Educators and Facilitators of Ohio Youth Serving Organizations and Formal/Informal Education Institutions serving students in grades 5-9
Registration Available: February 4 – March 4, 2022
Point of Contact: Gerald Voltz
Contact: GRC-Ed-Opportunities@mail.nasa.gov

NASA Glenn's Office of STEM Engagement recognizes the value of the maker movement, particularly with respect to its relevance to K-12 education. The Make it NASA project seeks to engage youth serving organizations that support student populations typically underrepresented in STEM fields through hands-on activities where students explore, learn, and create products relevant to NASA's current missions and developing technologies. Make it NASA poses open-ended questions through a structured inquiry-based approach that allows students to be creative in using their own ideas while leveraging current and emerging technologies to formulate a product related to NASA Glenn's research and the work of NASA as a whole.

Make it NASA Activities Include:

- A main question that NASA scientists and researchers are currently studying
- A step-by-step student journal to document student work
- Links to supporting NASA resources that extend the Make it NASA content
- Connections to NASA Subject Matter Experts (SMEs) where participants can discuss their Make it NASA products and the SMEs' work at NASA
- Opportunities for student teams to present their finished Make it NASA products to the Office of STEM Engagement in the form of a live showcase event, slide presentation or video presentation
- In-person professional development for facilitators to learn how to conduct the Make it NASA activity in their own settings
- Support for connecting with local making spaces to enrich the Make it NASA project

NASA Glenn has developed the following Make it NASA Activities:

- **Save Your Breath** - Students build and test a data-collection system consisting of a sensor, microcontroller, and transmitter that could be used during lunar exploration.
- **How Would You Measure the Moon?** - Using the Design Thinking Process, students plan and conduct a scientific mission to take measurements on the lunar surface.
- **What Would it Take to Live on Mars?** - Using the Design Thinking Process, students design and build an element critical for astronauts to live and work on Mars.

Glenn Research Center - Office of STEM Engagement

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