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SMSC November 2021 Newsletter

News This Month

Wrapping Up 2021

We submit our annual report for 2021 this month and are beginning to think about 2022. Our annual meeting with all members of the Science Activation NASA community will take place at the end of the month.

As you prepare for the end of your semester, let us know what you need in the coming year. We have expanded our capacity to include classroom or club activities that include touring the universe with Open Space visualizations (a SciAct partner) and are planning professional development sessions for HS teachers interested in how physics relates to plant and animal circulatory systems as well as dynamics of our Sun for Earth Science classes. We now have a [google spreadsheet](#) which lists dates we are available for in-person or virtual activities. Let us know if you are interested in having us visit your club, organization or classroom.



Shout out to Southwestern Community College students Andrew Frady, Alberto Cruz, and Daniell Triplett who won this year's Space Apps Challenge with their project titled **"Talking Leaves: Describing SAR in the Cherokee Language"**

Mark your calendars for next October - we hope to be in-person at PARI!

<https://science.nasa.gov/learners/nuggets/communicating-science-with-chokeee-language>

Local Events

November 16th [12pm] - sign up *HERE*: <https://forms.gle/rq5sMLP6KELnMjER7>

Live stream of NASA science experts giving a Virtual Tour of NASA's Meteorite Lab and Astromaterials 3D.

November 18th [12pm] - Blackfoot Poetry: From Einstein to Spacetime. Corey Gray and Sharon Yellowfly will share their work translating the physics of black holes and spacetime into the Siksika (Blackfoot) language. <https://sigp.wp.unca.edu/guest-lecture/>

A Recording of the Oct. 26th discussion on the James Webb Space Telescope (set to launch Dec. 18th) along with materials for activities at different grade levels is available upon request.

NASA NEWS



The Road To Launch And Beyond For NASA's James Webb Space Telescope

Now that NASA's James Webb Space Telescope has safely arrived at its launch site in French Guiana, on the northeastern coast of South America, technical teams have begun making progress on the final checklist of preparations before liftoff scheduled for December 18th.

<https://www.nasa.gov/feature/goddard/2021/the-road-to-launch-and-beyond-for-nasa-s-james-webb-space-telescope>

JWST has a blog to keep you abreast of what is happening during the telescope's launch and commissioning timeframe. The first science from the observatory won't be available until next summer, but there are many exciting things along the way. We'll also use this space to hear firsthand from some of the mission's top scientists and engineers about the technical processes that are happening, their experiences with the mission, and the exciting discoveries that await us!

<https://blogs.nasa.gov/webb/2021/10/21/introducing-the-webb-blog/>

NASA STEAM Day Extended: The virtual event [Webb STEAM Day: A Learning Journey Together](#) has been **extended through Nov. 11!** This event is geared towards learners of all ages. Participants will hear pre-recorded talks about the critical three-week period after launch, when engineers will command the observatory to unfold for use in space; listen to a Webb audiobook; learn how Webb will extend the scientific discoveries of other NASA missions, starting with the release of stunning images six months after launch; and more.

Stacking Complete – This week, teams successfully stacked our mega-Moon rocket – the [Space Launch System](#) – and Orion spacecraft that will launch the next generation of deep space operations, including Artemis missions on and around the Moon.





Downlinks with Astronauts [Oct. 2021 - April 2022] In-flight education downlinks are opportunities for students and educators to interact with astronauts aboard the International Space Station during a live, 20-minute question-and-answer session. The [planning guide](#) offers information about the process and requirements to host an In-flight Education downlink. Proposals open May 3rd and are due on June 30th for the opportunity to participate in this program. Email JSC-Downlinks@mail.nasa.gov for opportunities.

With First Martian Samples Packed, Perseverance Initiates Remarkable Sample Return Mission

<https://www.nasa.gov/feature/goddard/2021/with-first-martian-samples-packed-perseverance-initiates-remarkable-sample-return-mission>

K-12 Opportunities & Resources

GLOBE International Virtual Science Symposium - If you missed the Informational Webinar for the 2022 GLOBE International Virtual Science Symposium (IVSS), it has been recorded and is now available. The webinar provides an overview of the 2022 IVSS, including submission requirements.



The theme for the 2022 IVSS is “Engineering Solutions for a Changing Climate.” Students are encouraged to think creatively about engineering and solving environmental issues through engineering solutions, especially concerning climate change.

To view the webinar, [click here](#); To view the slide deck, [click here](#).

Dates to Keep in Mind:

- Reports Accepted: 01 January through 11 March 2022
- Judging Webinar: 30 March, 10:00 a.m. MT (To join, [click here](#); passcode: 2022IVSS)
- Judging Period: 30 March through 06 April
- Feedback and Virtual Badges Shared: 22 April
- Drawing for Stipends: 22 April

NASA Challenges Students to Design Moon-Digging Robots The [Lunabotics Junior Contest](#) is open to K-12 students in U.S. public and private schools, as well as home-schoolers. To enter the contest, students must submit entries, which must include an image of the robot design and a written summary explaining how the design is intended to operate on the Moon, **by Jan. 25, 2022**.

<https://www.nasa.gov/press-release/nasa-challenges-students-to-design-moon-digging-robots>

CS4ALL NSF Supported Program at Appalachian State University

Summer 2022 Dates: (June 19 - July 15) The objective is to train high school teachers to teach AP CS Principles in their schools. During this four-week summer program, participants will gain skills that they can utilize to establish an AP CS Principle course and create instructional and support material for their course. In addition, participants will have hands-on experience with some CS modules that they can use in their courses. **Full-time high school or early college teachers are eligible.** We are seeking energetic and motivated participants who can entice students about computer science and its application in different fields.

More information here: <https://cs.appstate.edu/cs4all/index.php>

Virtual Field Trip with NASA's Chandra X-ray Observatory November & December 2021

As NASA's premier X-ray telescope, Chandra gives us a powerful tool to investigate hot regions of the Universe, from black holes, to exploding stars, colliding galaxies and more. Get a backstage pass to Chandra's Operations Control Center, tour the Chandra spacecraft through virtual reality, and take a (virtual) quick trip to some exploding stars in our own galaxy. This virtual field trip is part of the Code.org CS Journeys. Multiple dates to choose from. Register here:

<https://chandra.si.edu/fieldtrip/registration.html>

REPOSITORY ALIGNED TO NC STATE STANDARDS (currently under revision)

<https://www.southwesterncc.edu/stem/stem-repository>

MATERIALS FREE to CLASSROOMS (They're doing no good sitting in an office)

(send an email to r_neff@southwesterncc.edu to claim these for your classroom)

- [Mosquito mapper guide and materials](#)
- The GLOBE Program information guide & activity [connections to NGSS](#)
- Astrobiology Curriculum guide and graphic story books
- Far Out Math Activities Guides

FAA Airport Design Challenge STEM AVSED Virtual Learning and Collaboration The Airport Design Challenge is a seven-week interactive, learning and collaboration opportunity which begins on November 15, 2021 and concludes on January 14, 2022.

How to Register and Participate

- [Register for your STEM AVSED account.](#)
NOTE: Access the registration form via this link or you may be unable to enroll in the Airport Design Challenge.
- [You can access detailed registration instructions](#)
- [Log in to the Challenge](#) after your STEM AVSED account has been created.

https://www.faa.gov/education/virtual_learning/airport_design/

Professional Development Webinars



Nov. 8th [1pm] - Explore Moon to Mars: Teaching Space Launch System in the Classroom NASA's Space Launch System (SLS) will be the world's most powerful rocket for a new era of human exploration beyond Earth's orbit into deep space. Each lesson is centered around aeronautics with a goal to inspire future scientists, mathematicians and engineers.

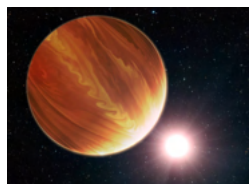
<https://na.eventscloud.com/ehome/index.php?eventid=646298&>

Nov. 8th [3pm] Q&A with NASA Deputy Administrator and Astronaut Pam Melroy

Melroy is second in command at NASA and one of only two women to command a space shuttle. As an astronaut, Melroy logged more than 38 days in space as part of missions to build the International Space Station. https://www.youtube.com/watch?v=ME_QNuGO1IQ If you cannot make the live event, a recording will be posted that you can watch with students. Register [HERE](#)

Nov. 10th [4:30pm] NASA's BEST: Satellites and the Engineering Design Process

NASA sends three types of robotic explorers into our solar system: satellites, landers and rovers. The webinar will include hands-on inquiry activities, NASA STEM K-12 videos, educator guides and instructional PowerPoint presentation. <https://na.eventscloud.com/ehome/index.php?eventid=646901&>



Nov. 11th [6pm] NASA's Hunt for Signs of Life on Exoplanets

In this webinar, we'll explore the science and math behind hunting for exoplanets, and how the James Webb Space Telescope may aid in NASA's search. Relevant instructional resources included.

<https://na.eventscloud.com/ehome/index.php?eventid=646818&>

Nov. 16th [1pm] TREES AROUND THE GLOBE STUDENT RESEARCH CAMPAIGN WEBINAR

We will focus on tree/forest height and land cover data that can be visualized, by region, with a selected group of two online tools: Global Land Analysis & Discovery (GLAD) and the Global Land Cover Viewer (GLCV). During this webinar, the campaign will introduce a data research template for students and focus on the GLOBE Asia and Pacific Region.

<https://www.globe.gov/web/trees-around-the-globe/overview/webinars>



Nov. 16th [2pm] - Evaluating Educational Experiences During Times of Limited Social Interactions - Adventures in Team-Based Inquiry

Participants will learn about the four stages of TBI and also hear how museum professionals around the country with no prior evaluation experience have used TBI to improve their work.

Resources

Team-based inquiry guide: <https://www.nisenet.org/catalog/team-based-inquiry-guide>

Team-based inquiry training videos: <https://www.nisenet.org/catalog/team-based-inquiry-training-videos>



Nov. 18th [2:00 pm] - The GLOBE Mission Mosquito (GMM) webinar, "The Power of Data"

Most of the time when we think of "big data," we think of bioinformatics and supercomputers. Big data is a collection of data that is both large and growing exponentially with time. During this webinar, Victoria Pickens, graduate research assistant in the Department of Entomology at Kansas State University in Manhattan, Kansas, USA; and the Medical, Urban, and Veterinary Entomology Section Representative to the ESA (Entomological Society of America) Student Affairs Committee, will share her experiences and recommendations for how to tackle "big data" – with everything from

examples in research to where and how to begin, and a peek into the benefits of coding. To register for the webinar, [click here](#).

Nov. 18th [6pm] "Failure is not an Option:" Critical & Creative Thinking @ NASA

In this webinar, we'll explore the everyday problem-solving and teamwork skills that NASA scientists and engineers use to spectacular effect: from brainstorming concepts to achieving the impossible. Relevant instructional resources will also be included.

<https://na.eventscloud.com/ehome/index.php?eventid=648154&>



Nov. 22nd [4:30pm] Trash Travels: Connecting Humans' Impact on Our Ocean World

We will explore data visualizations from My NASA Data to connect watersheds, runoff, and ocean circulation to the global issue of ocean plastics. EarthEcho will walk through EarthEcho Expedition: PlasticSeas classroom and demonstrate the real-world impacts of plastics pollution through live shorebird bolus dissection to investigate what happens as plastics break down in our marine ecosystems!

<https://na.eventscloud.com/ehome/index.php?eventid=648818&>

Nov. 22nd [9:00pm] NSN Webinar Series: Exoplanets: Finding Life in the Galaxy - Erika

Blumenfeld from NASA's ARES program at the Johnson Space Center will share with us their new Astromaterials 3D project. https://nightsky.jpl.nasa.gov/news-display.cfm?News_ID=707

Nov. 23rd [6pm] Space Food & Nutrition Explore NASA's Space Food using mathematics to investigate nutritional needs for astronauts onboard the International Space Station and long duration space flight. Calculate the impact of body type, age and exercise on an astronaut's daily caloric needs. Investigate relationships between food packaging, serving sizes and product waste. Come enjoy a menu of inquiry-based activities designed to integrate food, nutrition and space as you satisfy your mathematics appetite.

<https://na.eventscloud.com/ehome/index.php?eventid=648223&>



Opportunities For All

Nov. 9th [11am] Deep Space Food Challenge Winners – This week, we awarded cash prizes to 18 teams for their ideas to feed future astronauts. Stay tuned for a NASA TV show about the winners with celebrity chef Martha Stewart and retired NASA astronaut Scott Kelly.

<https://www.nasa.gov/press-release/nasa-announces-winners-of-deep-space-food-challenge>

Take Part in the James Webb Space Telescope #UnfoldTheUniverse Art Challenge - Show us what you believe the Webb telescope will reveal by creating art. You can draw, paint, sing, write, dance — the universe is the limit. Share a picture or video of you and your creation with the hashtag #UnfoldTheUniverse for a chance to be featured on our website, social media channels, and the Webb telescope's historic launch broadcast. **The deadline for submissions is Dec. 18, 2021.**

<https://www.nasa.gov/content/goddard/2021/nasa-james-webb-space-telescope-unfold-the-universe-art-challenge>

PODCAST

Community organizers Chrishelle Palay and Rose Arrieta lead us on a journey, meeting and learning from frontline survivors, first responders, and multigenerational organizers who have found creative ways to serve their communities when they were hit by devastating wildfires and hurricanes. As they capture these reflections, the people they meet are forced to put all they've learned to the test when confronted by new crises — more wildfires, unprecedented earthquakes, a hurricane, and a global pandemic. BUT NEXT TIME is a limited-run podcast that spotlights powerful stories of community-led disaster prevention and recovery and answers one vital question: how can we ensure that next time will be different?

<https://risehomestories.com/but-next-time/about/>



STEM Pillars: Bringing science to rural libraries & museums

STEM Pillars addresses the need for an empirically-tested pedagogical model for engaging hands-on science and engineering that focuses on community issues — in which adults and children learn together. The team has worked with over 600 research participants to encourage engineering and science activities that are relevant to rural communities.

<https://multiplex.videohall.com/presentations/1477/3101>

November skies

From November 6th through the 11th, watch the Moon glide past Venus, Saturn, and Jupiter after sunset in the south/southwest. In particular, if you step outside for a look on November 7th, you'll find the four-day-old crescent Moon just about 2 degrees away from Venus. Should be really pretty, so don't miss it.

Find more to watch here:



<https://solarsystem.nasa.gov/skywatching/whats-up/>



Lucy: Inspiration and Asteroids

NASA's Lucy mission will explore a record-breaking number of asteroids.

We have a slack channel - if you would like to be added to the channel, please send an email to r_neff@southwesterncc.edu.