

**ES/MS SPRING 2021 VIRTUAL STEM-E Conference Workshops**

***Elementary and Middle School-Thursday, April 22***

***1st Session-9:45-11:00 Lunch 11:00-11:35 2nd Session-11:45-1:10 Depart***

***Welcome 9:30 am***

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| **SESSIONS** | **PRESENTERS and Session LINKS (ZOOM)** |
| **WELCOME-9:30 am** | **Caroline Williamson, Student Engagement Coordinator**  Topic: WELCOME STEM-E Time: April 22, 2021, 9:30 AM Eastern Time (US and Canada) |
| **MORNING SESSIONS** | **9:45-10:45AM** |
| **STEM GEMS**  **Discover Exciting STEM Careers!**  In this session, students will participate in an interactive session where they will learn about more than 40 amazing STEM careers! They will get to "meet" women in these careers, understand how they make a difference in the world, and how they help people. They will leave the session with lots of advice and guidance to help them pursue a career in STEM, too! Students should bring their STEM Gems books to this session. Maximum-30 Students | * **Stephanie Espy, Presenter**   MathSP Founder and CEO | #STEMGems Author and Speaker | #1 LinkedIn Top Voice in Education | #GiveGirlsRoleModels  **STEM GEM Books will be sent to your school** |
| **Spectroscopy** The study of light and the spectrum.  We show how splitting light with a prism can reveal the composition, temperature, and movement of objects.  It can be used to study what a distant nebula is made from and how its moving and expanding, or what a sample of rock is made from, or to identify a mystery substance from a crime scene or archeological site.  The spectra, or rainbows, can come from things here on Earth, or places deep in space.  They can be in colors our eyes can see and examine, or colors far beyond our ability to detect without the use of special antenna &instruments. ***Registrants will receive materials to split visible light and examine the spectra, and to investigate Doppler Shift.*** | **PARI-Pisgah Astronomical Research Institute**  **Timothy DeLisle** *Field Studies Officer & Software Engineer* 828.862.5583 (o) [1 PARI Drive, Rosman, NC 28772](https://www.google.com/maps/place/1+Pari+Dr,+Rosman,+NC+28772,+USA/@35.2008149,-82.8742504,17z/data=3D%213m1%214b1%214m5%213m4%211s0x8859a=7c7f1bab70b:0xd03ed60692c4ce2%218m2%213d35.2008149%214d-82.8720617) [www.pari.edu](http://www.pari.edu/)**-**PARI creates *Space Science At Home*, a space kit initiative that brings real space science research to back yards, kitchen tables, and the classroom. **KITs required. Approximately $3.00 per student plus mailing** |
| **Trash to Treasure**  Create something new out of something old. Make one person’s trash another’s treasure. Work with Sequoyah Fund to create a new product, market it, price it, and try to sell it to your peers. This entrepreneurship activity is for creative individuals who enjoy problem solving, creating new things, and being silly.  Participants should come to the session with 3 items. The more random the better! | **Hope Huskey,** Associate Director, Sequoyah Fund [hopehuskey@sequoyahfund.org](mailto:hopehuskey@sequoyahfund.org) |
| ***What Satellites See***  Learn how NASA scientists use satellite information about Earth to discover the history of the Moon and Mars. This information will help the Artemis mission to put the first woman on the Moon in 2024 and eventually a colony as practice for going to Mars. We will also look at images from the Perseverance rover which landed on Mars Feb. 18, 2021. | **Randi Neff, Project Coordinator, SCC**  [*Smoky Mountain STEM Collaborative*](https://www.southwesterncc.edu/STEM) |
| **LEGO SERIOUS PLAY**  **House of Hope**-In this hands-on workshop, students will create a model of their House of Dreams using images of Austrian/New Zealand artist and architect, Friedensreich Hundertwasser as inspiration for their design. Students will be encouraged to create their House of Dreams as colorful as they wish. Students are encouraged to bring materials from their own home which they can construct with and that inspire them. | **Megan Oteri,** Let’s Brick Ambassador United States for the Agency for Cultural Diplomacy. Certified LEGO® Serious Play® Workshop Facilitator: Wilson, NC  **SUPPLIES-**$5 per student; teacher purchases materials with stipend at Dollar Store or other store of choice. Coaches will need to purchase modeling clay , cardboard, tin foil, scissors, markers, construction paper, pipe cleaners, popsicle sticks, tape, glue for their participants |
| **AFTERNOON SESSIONS** | **11:45-12:45 pm** |
| **Plants in Space** Living in space requires essentials like food and air to breath that is clean and oxygenated.  It also requires comfort and well-being to be productive in such a challenging place for any length of time. This program looks at all the roles plants have, and will serve in space exploration.  From providing food, oxygen, and removing contaminants from the air to providing needed compounds and building materials, and even providing humans with purpose and well-being. Register Early-Potential Kit Registrants would receive materials to plant and care for a selection of plants that have been grown in space and chart their progress. | **Pari**  **PARI-Pisgah Astronomical Research Institute**  **Timothy DeLisle** *Field Studies Officer & Software Engineer* 828.862.5583 (o) [1 PARI Drive, Rosman, NC 28772](https://www.google.com/maps/place/1+Pari+Dr,+Rosman,+NC+28772,+USA/@35.2008149,-82.8742504,17z/data=3D%213m1%214b1%214m5%213m4%211s0x8859a=7c7f1bab70b:0xd03ed60692c4ce2%218m2%213d35.2008149%214d-82.8720617) [www.pari.edu](http://www.pari.edu/)  PARI creates *Space Science At Home*, a space kit initiative that bring real space science research to back yards, kitchen tables, and the classroom. |
| **Turtles**  Students will learn about the basic biology of reptiles vs. amphibians and dispel myths, examine differences between terrestrial and aquatic species, and have the opportunity to see a live turtle. | **Patrick Brannon**  Patrick Brannon  Highlands Biological Station |
| **Strawbees Maker Muse**-In this hands-on, maker space STEAM workshop, students will build their own individual [mechanical arm](https://learning.strawbees.com/activity/make-a-mechanical-arm/) and [platonic solids structures](https://learning.strawbees.com/activity/build-the-platonic-solids/) using [Strawbees](https://learning.strawbees.com/) kits\*.  Students will explore platonic solids-- octahedrons, icosahedrons, hexahedrons, tetrahedron, and dodecahedrons. These shapes have intrigued philosophers, mathematicians and scientists for centuries.  From all possible convex polyhedra, only five can be made with regular polygons as faces. There are many ways to prove there can’t be a sixth Platonic solid, one of them is trying it yourself! Students will end the workshop with a friendly competition where teams will collaborate using their mechanical arms to create a platonic solid of their choice. **KIT Required-Order by March 26** | **Megan Oteri,** Brick Scholars  \*Teachers retain kits for future use in the classroom. Downloadable blueprints and video directions will be provided. Kits can be sanitized for future use**.$4 per kit + $2 shipping**  **meganoteri@gmail.com** |
| ***What Satellites See***  Learn how NASA scientists use satellite information about Earth to discover the history of the Moon and Mars. This information will help the Artemis mission to put the first woman on the Moon in 2024 and eventually a colony as practice for going to Mars. We'll also look at images from the Perseverance rover which landed on Mars Feb. 18, 2021. | **Randi Neff, Project Coordinator, SCC**  [*Smoky Mountain STEM Collaborative*](https://www.southwesterncc.edu/STEM) |

***Register for a Morning And Afternoon Session! Some workshops require kits, please register early!***

**PLEASE Return the below form to** [**cwilliamson@wresa.org**](mailto:cwilliamson@wresa.org) **to confirm your group’s participation by Monday,**

**School name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Coach\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Group Coach Name & School** | **Grade(s)** | **# of Students & AdultsExpected** | **First Choice**  **Group**  **Morning** | **2ndChoice**  **Group**  **Morning** | **First**  **Choice**  **Afternoon** | **2nd Choice**  **Afternoon** |
| ***EXAMPLE***  Jane Smith,  CCS | 9-12 | Students -10  Adults-2  2 Coaches | *Mix and Match* | *Science Around the House* | *Mix and Match* | *Tinkercad* |
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**If you do not have all of your participants names, yet, please send approximate number expected to participate**

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| **Names of Participants** | **Email if possible** | **Notes** |
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***STEM-E gratefully acknowledges our coaches, presenters, district leaders,***

***And dedicated volunteers who provide an***

***Engaging learning experience for our students, and especially to:***

***Cherokee Preservation Foundation for their vision and belief in the power of student engagement***

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