

## Virtual Workshops for STEM Pathways For Girls Conference on November 14-15, 2020

We have many exciting virtual workshops for girls to choose from!

All the presenters are women working in STEM professions who want you to experience the challenge and fun of STEM!

Morning, Saturday, November 14th 9:00-10:30am and 11:00am-12:30pm	Morning, Sunday, November 15th 9:00-10:30am and 11:00am-12:30pm
<p><b>1.1 / 2.1 The Science of Sound</b> Sound is part of our everyday lives! Explore the science of sound: what is sound, how does sound travel, and why is this important in science? You will conduct experiments: make a balloon scream, build a pan flute, “see” sound.</p>	<p><b>5.1 /6.1 All About Gears: From Clocks to Cars</b> Gears are used the world over and for thousands of years. Experiment with gears and how they are used in clocks, trains, and cars. Learn about mechanical engineering and physics in this hands-on workshop.</p>
<p><b>1.2 /2.2 Build a Prosthetic Leg ... For an Elephant!</b> Learn what Biomedical Engineers do on the job by designing an artificial leg to help an elephant! Animals can be injured just like people, and they need prosthetic limbs, too. Put on your engineering hat and create a design with function, comfort, and durability.</p>	<p><b>5.2 /6.2 Outbreak Investigation</b> How do scientists investigate disease outbreaks and how they might spread through America? In this workshop, you will use arithmetic to look into the cause of a food borne disease outbreak, and investigate how infectious diseases spread. Learn about what epidemiologists do!</p>
<p><b>1.3 /2.3 DNA Challenge</b> Come join us as we use DNA to explore some of the weirder creatures on the planet. We’ll look at ice cream cone worms, pink fairy armadillos, real life sea monsters and more! You will learn how to figure out which DNA sequence belongs to each creature, make a DNA model for your favorite weird creature, and identify the closest relatives of a couple of sea monsters.</p>	<p><b>5.3 /6.3 Creating Stellar Constellations and Hunting Black Holes</b> Join a professional astronomer and study the sky. Make your own constellations. Investigate how the gravity of black holes pulls on stars and planets through your own experiments. Learn how astronomers look for new planets and study light. <i>Note: Workshop requires downloading Stellarium Astronomy Software.</i></p>
Afternoon, Saturday, November 14th 1:30pm-3:00pm and 3:30pm-5pm	Afternoon, Sunday, November 15th 1:30pm-3:00pm and 3:30pm-5pm
<p><b>3.1 /4.1 Plants, Water and Climate</b> Conduct your own experiments to learn how plants influence our climate, and how climate influences plants. Join a scientist in studying plant water uptake, and how different plants use water, conduct photosynthesis, and respond to changes in climate.</p>	<p><b>7.1 /8.1 Blasting Into Space</b> Join a scientist and learn about rockets and going into space! Scientists and engineers need to think about rocket design, how to get a payload into orbit, how to survive the harsh environment of space, and return astronauts and experiments to Earth.</p>
<p><b>3.2 /4.2 Adventure in Archaeology</b> Step into the role of an archaeologist for the afternoon, with two hands-on activities that will demonstrate some of the unique skills of an archaeologist. Also learn about dendrochronology, palynology, and osteology. Are you an archaeologist? Take this workshop and find out!</p>	<p><b>7.2 /8.2 Exploring the pH Scale with Acid/Base Chemistry</b> Why does bleach make your clothes white? Why does vinegar taste tart? Your home has many “acids” and “bases”, and scientists measure these with the pH scale. In this hands-on workshop, come spend an hour with a professional Chemist and explore!</p>
<p><b>3.3 /4.3 Soil Engineering: Shallow &amp; Deep Foundations</b> If you were going to build a tall skyscraper or a bridge across the Rio Grande, what should you consider? How about the soil and rock under the ground? In this workshop, build your own test bed with layers of pebbles, soil, sand; then, do experiments to understand shallow and deep foundations, soil settlement, bearing pressure, and how engineers design in real life.</p>	<p><b>7.3 /8.3 Engineering Roller Coasters: Fun with Physics</b> Be a Civil Engineer for a day and design your own roller coaster for marbles! And have fun with physics, learning about potential energy, kinetic energy, friction and gravity. You will build your own marble accelerator ramp to transform potential energy into kinetic energy. Then, design a roller coaster with a loop, managing your marble’s energy to get to the end.</p>