



## Virtual Field Trip Guide Week 1

**Tuesday, Oct. 12th**

Time	Event	Audience
10am-11am	<p><a href="#">Discover the BioPark: Animal Adaptations</a></p> <p>Visit with the ABQ BioPark as we explore why penguins are such good swimmers, how snakes slither, and more, as we learn about animal adaptations together.</p>	Elementary school
11am-12pm	<p><a href="#">Robot Combat at New Mexico Tech</a></p> <p>This 6th-12th grade workshop will guide students through the process of designing, building, and programming a bot. We will show some of the various classes of bots, the types of signals used to communicate with our bots, and some ways to use math and coding to problem-solve getting different types of signals to talk to each other. We will also show some clips from past competitions, and showcase robots NM Tech students are currently building.</p>	6th grade and up
2pm-2:30pm	<p><a href="#">Fun with Foil Boats</a></p> <p>What makes a boat float? Young children will learn to use the engineering design process by making simple boats out of foil, floating them and using coins to try and sink them!</p>	K - 3rd

# 2021 NM Science Fiesta Virtual Field Trip Guide



Wednesday, Oct. 13th

Time	Event	Audience
9am-10am	Virgin Galactic  Check back soon!	Check back soon!
10am-11am	<a href="#">What do you want to be when you grow up?</a>  Figuring out what to be when you grow up is a question we're all asked from a very young age. As you get to be a teenager or an incoming college student, the pressure to have that all figured out becomes very real. Did I grow up thinking I wanted to work for a utility? No, of course not. But I knew what I was good at and searched for a company with the same values I had. I applied my passions to my schooling and found a career doing what I love. I think you'd be surprised at what cool jobs exist right here in our very own community. Let me share a day in the life of a company spokesperson for the state's largest utility company.	Middle school and high school
12pm-1pm	<a href="#">The Future of Energy Storage</a>  The only way we will really be able to use solar, wind, and other renewable energy sources is by improving our energy storage. Since most of our renewable energy sources can't produce energy on demand, energy storage is needed during peak hours of production to supply power when there is low or no energy production at all. Currently, energy storage is extremely expensive for renewable energies and/or has possible safety issues. One of the energy storage methods being developed is the use of hydrogen fuel cells. Hydrogen fuel cells still need more research; however, their high energy conversion rates, zero-emission power and lower operational costs show a promising future. In the presentation we will go over these concepts on a basic level and have a demonstration with a hydrogen fuel cell car.	Middle school and high school

# 2021 NM Science Fiesta Virtual Field Trip Guide



1pm-2pm

[Junior Achievement's Virtual Career Speaker Series](#)

High school

Junior Achievement of NM is pleased to host a panel of speakers from CREW NM, the leading organization for women in commercial real estate in New Mexico ! These dynamic business professionals are excited to share their career stories and spend time with you!

## Thursday, Oct. 14th

**Time**

**Event**

**Audience**

2pm-3pm

[Share with Wildlife: get involved with a wildlife project at your school!](#)

High school

The Share with Wildlife program at New Mexico Department of Game and Fish funds wildlife-focused projects all around New Mexico. Get ideas for different types of projects that the program supports. Learn about the Biota Information System of New Mexico (BISON-M) as a valuable source of information on New Mexico's wildlife. And get career tips for landing a job to conserve and protect wildlife and wildlands!

## Friday, Oct. 15th

**Time**

**Event**

**Audience**

11am-12pm

[The Science of Light with SolAero Technologies](#)

5th - 8th grade

SolAero Technologies is a company that loves the sun and outer space! Which makes sense, because we make solar power for space exploration! We are excited to bring you a fun presentation about the science of light, focused on how the solar spectrum can be broken into different colors. Each band of colors lets us collect electricity to power vessels throughout the solar system. We will end our presentation with a tour of facilities and an overview of some of the space missions we have powered.

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# 2021 NM Science Fiesta Virtual Field Trip Guide



## Virtual Field Trip Guide Week 2

Monday, Oct. 18th

Time	Event	Audience
9am-10am	<a href="#">Spaceport America with Alice Carruth</a>  Join us for a virtual tour of the world's first purpose-built commercial spaceport, Spaceport America.	2nd - 8th grade
10am-12pm	<a href="#">Meet an Amateur Weather Forecaster</a> and See the Launch of a Weather Balloon!  Meet Dr. Mike, who helps track weather events for the New Mexico Climate Center as an amateur weather forecaster. Along with Dr. David Dubois, you will hear some great stories and learn about some Citizen Science projects that you can get involved in. In the second hour, you'll see the launch of a weather balloon and tour a weather station used by forecasters in the state.	All ages welcome
1pm-2pm	<a href="#">A History of Earth and Life!</a>  A journey from the formation of the Earth as a Hot Gassy baby to the death of the Dinosaurs!	3rd - 7th grade

# 2021 NM Science Fiesta Virtual Field Trip Guide



2pm-3pm

[Water Treatment Technologies](#)

High school

Water! We use it everyday, and access to high quality clean water is as simple as turning on your tap. Of course, this is not just some miracle from nature handed down from on high. There is actually a lot of science and engineering that goes into delivering abundant supplies of this precious resource right to our houses. How is this possible though? How much water is there and where does it come from? Will we run out of water or will our water become too polluted to drink? Where does water pollution come from and what are some of the main concerns when it comes to securing enough water for future generations? If these questions interest you, then there is one more question you should ask yourself. Is a career in the water industry something that I should consider? This presentation will offer insight into all these questions and more.

**Tuesday, Oct. 19th**

**Time**

**Event**

**Audience**

10am-11am

[Lasers: Making Light Work!](#)

5th grade and up

Did you know light can be used to heat - or even burn - objects? Compare the similarities and differences between the light from a regular household bulb with that produced by a laser. Then, we'll talk about laser power and demonstrate lasers with a million times the difference in power!

1pm-1:30pm

[Schrödinger's Cat](#)

7th grade and up

Is it alive, or is it...not alive? Learn about the thought experiment that kept Einstein awake at night. A brief look into the Quantum realm through an easy to understand demonstration.

2pm-3pm

[Aerodynamics](#)

6th grade and up

The four forces of flight and experiment with airplane control surfaces through the use of a paper airplane.

# 2021 NM Science Fiesta Virtual Field Trip Guide



Wednesday, Oct. 20th

Time	Event	Audience
9am-10am	<a href="#">The SunChaser 2k20 Project</a>  Curious about solar panels that people put on their homes? The SunChaser is a mobile lab that teaches about renewable energy. This unique teaching trailer was designed by NM Solar Engineering Association, who joined forces with ACE Leadership High School students. You'll learn how these two groups took up the task of constructing the SunChaser, utilizing their skilled knowledge base and hands-on teaching environment.	Middle school and up
10am-11am	<a href="#">Blowing Things Up...For Science!</a>  Tour the Energetic Materials Research and Testing Center (EMRTC) Field Lab and see some of the test sites used to perform experiments, including some of the real explosives that are used at EMRTC. Learn how scientists collect data from these experiments and how the data is analyzed. And you'll be able to answer the question: How fast does a pineapple go when you blow it up?	7th grade and up
11am-12pm	<a href="#">Tour of the Solar System</a>  Travel from the Earth and around our solar system visiting big and small;with some of the smallest objects in our solar system being more fascinating than the planets!	3rd - 7th grade

# 2021 NM Science Fiesta Virtual Field Trip Guide



12pm-1pm

[Floodplain Simulator](#)

Middle school and up

All of us have seen our phones and TV's give a flash flood warning. But we can do a lot to help prevent these dangerous flooding events. Explore the value of wetlands, retention ponds, and levees in flood management, Witness how downstream communities are affected by high runoff. And use a computer simulator to test solutions to a variety of floodplain problems.

1pm-2pm

[Guar as an alternative crop for New Mexico](#)

Middle school and up

Guar is an amazing plant that can be grown right here in New Mexico! Guar can be used as forage, as food (fresh beans!), or as seed for Guar gum. Guar gum is used in stuff we eat or use every day, including ice-cream, cottage cheese, cosmetics, paper and textile products. Guar gum is also used as a gelling agent in natural oil and gas exploration. Learn all about this fascinating plant and how it could benefit our economy!

2:15pm-3:15pm

[The Future of Green Energy is Storage](#)

Middle school and up

The only way renewable energy will be able to power the world is by improving our energy storage. Since most of our renewable energy sources can't produce energy on demand, energy storage is needed during peak hours of production to supply power when there is low or no energy production at all. Currently, energy storage is extremely expensive for renewable energies and/or has possible safety issues. One of the energy storage methods being developed is the use of hydrogen fuel cells. Hydrogen fuel cells still need more research; however, their high energy conversion rates, zero-emission power and lower operational costs show a promising future. In the presentation we will go over these concepts on a basic level and have a demonstration with a hydrogen fuel cell car.

# 2021 NM Science Fiesta Virtual Field Trip Guide



Thursday, Oct. 21st

Time	Event	Audience
9am-10am	<a href="#">Atmospheric Water Harvesting</a>  This virtual presentation will feature the UNM Environmental Engineering laboratories. Learn what it is like to be an environmental engineering researcher and how environmental engineers make a difference. Hear from graduate student Natalie Gayoso as she shows her research on atmospheric water harvesting, an innovative technology that provides clean drinking water from the air.	High school and up
10am-11am	<a href="#">Bots and Physics</a>  This workshop will guide students through the process of designing, building, and programming a bot. Learn about the various classes of bots and compare them to wrecking balls and "blasters". We will also talk about the various forms of energy and how these bots, balls, and "blasters" use energy in various forms	6th grade and up
11am-12pm	<a href="#">Science in the Courtroom</a>  If you've ever watched a courtroom drama, you know the importance of the expert scientist. Learn some real stories of science in U.S. courtrooms! You'll see how science can be used to reconstruct an automobile accident, as well as learn about a case involving a fall from a building.	High school and up
12pm-1pm	<a href="#">A Peek into Making the World's Most Important Chemical: Graduate Student Research in CISTAR</a>  Four CISTAR graduate student research fellows will discuss their pathways into science and research efforts as part of CISTAR's mission to develop new strategic processes for producing and purifying ethylene and propylene. Three major topics will be discussed: catalysts, membrane separations, and safety. CISTAR is a National Science Foundation (NSF) funded Engineering Research Center (ERC) with five member universities and dozens of industrial partners.	8th grade and up



# 2021 NM Science Fiesta Virtual Field Trip Guide



1:30pm-2:30pm

[New Mexico Tech Materials Engineering Group](#)

Have you heard of a 3D printed house? Learn about additive Manufacturing, materials engineering, and how ceramic coating has changed our world.

Middle school and high school

## Friday, Oct. 22nd

**Time**

**Event**

**Audience**

9am-10am

[Virtual Tour of Virgin Galactic](#)

Middle school and up

Virgin Galactic is the world's first commercial spaceline - developing and operating a new generation of space vehicles to open space for everyone. Our mission, to be the Spaceline for Earth, means we focus on using space for good while delivering an unparalleled customer experience. With our heart and home at Spaceport America, New Mexico, it is an honor for us to be part of this event and show you around our facilities virtually.

10am-11am

[Social emotional learning and the brain](#)

All ages welcome

This presentation will focus on the positive impacts that mindfulness and social emotional learning has on the brain. Participants will learn about anatomy of the brain and be led through a variety of social emotional learning activities.

11am-12pm

[How to Bee in a Changing World](#)

4th grade and up

Learn what it's like to be a beekeeper! We'll discuss honey bee facts, the differences between honeybees and native/wild bees, and what we can do to support them both in a changing (and warming) world.

# 2021 NM Science Fiesta Virtual Field Trip Guide



12pm-12:30pm

[Dark Skies with Ranger Greg Baker](#)

5th grade and up

Discover the incredible impact of a dark night sky on the world around us. Dark skies are a resource that not only support a wide variety of habitats and life processes, but also influence the cultural stories from the ancient Greeks in the Mediterranean to the Ancestral Puebloans of New Mexico. However, just like many natural resources, it can be hard to find natural dark skies as artificial lights continue to expand with growing populations. Join a Park Ranger, and learn what you can do to keep the future of the night sky dark!