



2021 National 4-H Youth Summit on Agriscience

Workshop Tracks & Descriptions

A total of eight Topic Tracks will be offered. Three workshops and a career panel will be offered for each track. Please indicate your track preference when registering for the summit.

- AG LITERACY
- AG TECHNOLOGY
- ANIMAL SCIENCE A
- ANIMAL SCIENCE B
- ENVIRONMENTAL SCIENCE
- FOOD SECURITY
- FOOD SCIENCE
- PLANT SCIENCE

AG LITERACY TRACK

Peanuts: From the Ground Up

Ashley Powell, Bruce Garner, Mary Payton Grimmett, LSU AgCenter

The power of the peanut! Join us for an interactive workshop focused on this mighty legume. Learn about the distinctive agriscience of peanuts including their amazing nutritional value. The misconceptions surrounding peanut allergies will also be explored along with the role of peanuts in fighting hunger and malnutrition issues around the globe.

Kids Growing with Grains

Ashley Travis, University of Maryland Extension

The Kids Growing with Grains program is an agricultural literacy program geared towards elementary aged youth. Within this workshop participants will learn how to prepare and instruct several different lessons related to plant science, food and nutrition, and animal science with an emphasis on grain production, and the use of grains in our daily lives.

Advocating for a Difference

Sydney Mitchell, Addison Mitchell, Kim Greenwald-Mitchell, Beyond the Farm

Right now, there is a shortage of agricultural education. Because of this, there is a shortage of people going into ag careers and people that aren't knowledgeable about ag careers and where their food comes from. So, how do we fix this problem? We need to find ways to make ag exciting and engaging! In this workshop, find out how you can help!

AG TECHNOLOGY TRACK

The Plastic Problem: Our Case in Point

Crystal Ahrens, Claire Zak, Louisiana 4-H

600 million metric tons of plastic will be found in oceans by 2040. Thrown out plastic breaks down to microplastic but will always remain in the earth as plastic. What if the answer to eliminating microplastics, is found in the magic of milk? Join us in exploring the world of polymers and bioplastics using items from your kitchen to change the way the world looks at producing plastics.

High Impact Meteorology

– Sponsored by Nutrien

Eric Snodgrass, Nutrien Ag Solutions

The science and technology that drives weather analysis and forecasting is rapidly advancing. Tools like dual-polarization Doppler radar and high-resolution multi-spectral satellite imagery allow us to observe extreme weather in real-time all over the world. In the last 40 years, weather disasters have racked up a trillion-dollar price tag in the US from events like extreme drought, flash flooding, landfalling hurricanes, hail, tornadoes and squall lines, to cold air out breaks, blizzards, ice storms, heat waves, and wildfires. Have you ever wanted to learn how these types of high impact meteorology form? Are you interested in learning the tools meteorologists use to forecast these events? Are you curious about how weather data is shared via apps and websites? In this workshop, students will take a walk on the wild side of weather with award winning professor, Eric Snodgrass and learn the modern science of high impact weather.

Climate FieldView & Bayer Digital Farming: The intersection of technology & agriculture

– Sponsored by Bayer

Ben Eberle, The Climate Corporation, Bayer

Digital tools and data science are accelerating agricultural innovation and transforming farming to advance how we convert natural resources into food. This session will provide an overview of The Climate Corporation, Bayer's digital farming arm, and how the organization is helping the world's farmers tackle the food supply challenge and care for the planet through new technologies.

ANIMAL SCIENCE A TRACK

Healthy Animals | Healthy YOUTH: A Zoonosis Education Toolkit for Youth in Agriculture

Chris Anderson, Lacie Ashby, Donielle Axline, April Barczewski, Sheryl Bennett, Ashley Travis, and Carrie Wivell, University of Maryland Extension

Zoonotic disease, or zoonoses, is of growing importance in our society, especially among youth engaged in animal agriculture. Zoonotic diseases can spread between animals and people and show how human health is related to the health of animals and their environment. Participants will explore zoonoses and Healthy Animals | Healthy YOUTH resources they can use to teach others about its importance.

Meet your Meat!

Carrie Sears, Kim Pond, Aliyssa Courville, Briley Wade, Massachusetts 4-H Program

Learn the skills of marketing your raised project beef, lamb and pork directly to the consumer. How to target your customer in a marketing campaign and advocate for the meat industry. Consumer insight, working as a team, and being a positive role model will be some of the skills gained. Important skills that help you become successful as you move forward in your education and career.

Genetic Diversity and Heritage Breeds

Kim Pond, Carrie Chickering-Sears, University of Massachusetts Amherst

When thinking about Genetics and Agriculture we often think of selecting for desired characteristics to improve the output, quality or health of a crop or herd. For example, more milkfat content, better weight gain or disease resistance. Genetics has another side for genetic diversity and why heritage breeds, heirlooms and seed banks are important.

ANIMAL SCIENCE B TRACK

Biosecurity! Assessing Animal Health and Reducing Disease Transmission

Thomas Hutson, April Barczewski, Sheryl Bennett, Christine Johnston, Becky Ridgeway, University of Maryland Extension

Protecting our food and fiber supply is essential for maintaining human health. Participants will observe images of animals and identify evidence of health and disease. Next, they will apply principles of biosecurity by developing biosecurity plans for animals they own or for a sample farm. Finally, they will share their plans and receive suggestions for improvement from other participants.

GPS Cows - Using GPS and Science to Improve Digital Literacy

Dr. Colt W. Knight, Dr. Amy Cosby, University of Maine and Central Queensland University

GPS Cows is program designed to improve the digital literacy skills of regional, remote, and rural youth. Participating youth increase STEM knowledge by learning how to construct GPS tracking Collars, design experiments, interpret data, map information using GIS software, and gain confidence by presenting their results to peers. A fully integrated website offers teaching aids and lessons plans.

Animal U: An Innovative way to learn about Animal Science

Amy Powell, Iowa State University Extension and Outreach

Experience a new online, engaging animal science curriculum called Animal U. This curriculum is designed for youth ages 9-19 and currently covers two species, beef and swine as well as careers. Animal U contains over 150 interactive lessons that are self-directed. The curriculum covers a variety of topics like genetics, reproduction, nutrition, animal welfare, show ready and many more.

ENVIRONMENTAL SCIENCE TRACK

Nature, the Original Recycler

Donna Nuger, Krish Nangia, JoAnn Britton, University of Illinois Extension 4-H Science Ambassadors

Illinois 4-H Science Ambassadors Teen Teachers will teach participants the three natural cycles, that influence our environment and its fitness for agriculture. followed by an online game utilizing Miro. Teen led breakout rooms will reinforce the lesson while providing the opportunity for participants to experience a deeper dive on how those cycles influence our environment.

Reducing Our Carbon Footprint in Ag and Beyond

– Sponsored by Bayer

Pamela Bachman, Erin Glarner, Bayer, The Climate Corporation

This workshop will provide an overview on the importance of our carbon footprint and reducing greenhouse gas (GHG) emissions including highlights from the Ag Innovator Experience "Lunch Challenge". We will cover the current science and new technologies in regard to global GHG reduction targets and ways that ag and individuals can make choices to encourage a more sustainable food system.

3 Ways You Can Turn Poop into Power

- Sponsored by Brightmark

Dajah Massey, Savannah Parke, Brightmark

Poop is powerful. Discover 3 innovative ways you can turn poop into power. Literal power production into renewable natural gas, your personal professional power & ways to put your passion into action will be highlighted. Diverse industry professionals will discuss how RNG works, how they developed a passion for renewable energy and how they got started in their careers. Get involved TODAY!

FOOD SECURITY TRACK

Solving the Food Waste Crisis

Carol S Hamilton, Clemson Cooperative Extension Service

One-third of the world's food is lost or wasted every year which is worth one trillion dollars. We will explore some of the solutions being implemented by farms, food manufacturers, and restaurants. Then we will test your problem-solving skills by assigning food waste scenarios. We will share our ideas and discuss how to implement these solutions in our own homes, schools, and communities.

Teaching Food Security - A Digital Escape Room

Sandy Hernandez, Sheila Velez Morales, 4-H Fusion Youth, UF/IFAS Extension & UPR Extension

A family is food secure if it has enough safe and nutritious food throughout the year so that all members can meet their nutrient needs with foods. What are ways we can become food secure? Participants will discover the answers by participating in an online ESCAPE ROOM.

Food Insecurity Simulation and What We Can Do

Avery Cross, Kaylee Collins, Georgia 4-H

In this workshop, participants will learn about food insecurity, and they will have the opportunity to put themselves in the shoes of someone who is food insecure. They will also discuss ways that we, as 4-H'ers, can make a difference in eliminating food insecurity for future generations. It is going to be up to the 4-H'ers to figure out how to live under different circumstances.

FOOD SCIENCE TRACK

Bread & Butter...Food Staples From Ag Products

Jeannette Rea Keywood, Kristin Osika, NJ 4-H Youth Development Program/Rutgers University

Milk and bread products are things that we eat every day. These important food staples are available to us thanks to farmers. During the workshop, you will learn how to make bread in a bag and butter in a jar as well as learn about the ingredients used and the nutritional value of these food staples. You will be prepared to teach these activities to younger 4-H members in your county.

The Microbiology behind Food Production and Consumption

Jeannette Rea Keywood, Kristin Osika, NJ 4-H Youth Development Program/Rutgers University

In this workshop, you will learn all about bacteria, and the role microbiology plays in food production! Through interactive worksheets, collaboration, discussion, and presentation, you will find out the difference between good and bad bacteria in food. You will also learn why food borne illness pose a threat, and what steps the food industry takes to prevent their spread.

What's the Buzz about Food Science?

Rick Hennigfield, American Farm Bureau Foundation for Agriculture

Join us to learn more about the chemistry of honey and how honeybees are involved in food science! We'll cover honey production, the engineering design process in food science, and even take a look at the science happening inside a honeybee. You'll leave ready to facilitate engineering challenges related to honey for middle school members in your area.

PLANT SCIENCE TRACK

Wild Mustard, Selective Breeding, and Plant Biotechnology: Engineering Crops to Feed the World

- Sponsored by Nutrien

Kasey Bozeman, University of Georgia & Georgia 4-H

Although GMO is a new term in our vocabulary, scientists have been selectively breeding plants for hundreds and hundreds of years. During this workshop, you will learn about the history of the wild mustard plant, and how it has been altered to create vegetables like cabbage, Brussels sprouts, cauliflower, and kale! You will also get to “breed” your own plant varieties through a probability game.

Understanding Grains

Brenda Aufdenkamp, Kayla Hinrichs, Nebraska Extension

The U.S. grain processing industry consumes more than 900 million bushels of wheat annually from husked berries(kernels) from grain-bearing plants that are dried and left whole to produce safe, and healthful milled grain products. Nutritionally, the less processed the grain, the more the benefits. This program will encourage you to select, prepare and eat grains that are the best for you.

4-H Viticulture Project

Dixie L Sandborn, Tracy D'Augustino, Tom Smith, Michigan State University Extension 4-H

Highlights of the Michigan 4-H Viticulture Curriculum Project will explore opportunities for youth interested in viticulture, value-added agriculture, and agritourism. With the current growth in the grape and wine industries, career opportunities are expected to explode. Youth will explore this exciting career path through interactive games while learning fun facts about viticulture.

GENERAL (Workshop #4 on Sunday; not track specific)

Career AGsperience: AGsplore Your Future with Us!

April Barczewski, Sheryl Bennett, Thomas Hutson, Christine Johnston, Becky Ridgeway, University of Maryland Extension

Career AGsperience is an agriculture career literacy program designed to increase participants' knowledge of agriculture careers and preparation for careers in animal science, environmental science, agri-business and leadership, and agricultural science and technology. Participants will learn about agriculture careers and the elements of preparing for a job in an agriculture-related field.

Reach Your Goals with 4-H

Jeanette M Stackhouse, Penn State University

Do you set a New Year's resolution? No you say? It's too hard to stick with it? I'm right there with you! Creating SMART goals and holding yourself accountable may just help you with that resolution, but let's think about how being intentional with your goals can help you be successful in other areas of life. Specifically, we'll talk about setting goals to help with your advocacy efforts.