NebrASKa Scientist Field Trips

Learning Objectives

In March of 2020, a small group of Nebraska Extension Professionals worked together to see how they could meet the quickly changing needs of teachers and youth across the state. Schools were switching to virtual learning platforms, which (as identified in a needs assessment sent to high school science and ag education teachers) left many teachers searching for ideas how to provide experiences that would emulate class activities or fieldtrips that were being cancelled. The team created the concept of bringing industries and professionals from across the state to students. The NebrASKa Scientist Virtual Field Trips aimed to reach high school and junior high students through virtual tours and explore a new topic each week.

Specific objectives include:

- Youth will learn about STEM (science, technology, engineering & math) and ag-related careers and better understand career pathway opportunities available in rural communities.
- Youth will virtually experience an industry by exploring the facility, observing specific skills needed for that career and be given the opportunity to network with those industry and university professionals.

Program Activities & Teaching Methods

NebrASKa Scientist Field Trips was designed to target high school students across all 77,220 square miles of the state. As the year continued, science and agricultural education classes around Nebraska were targeted. Through the use of social media, the team intended to capture the attention of 107,000 high school youth not attending face-to-face school, home schooled youth, as well as teachers that may see it through the expansive Nebraska 4-H pages and sites. This website has been utilized by many educators and families throughout the Pandemic.

Each tour highlighted a STEM (science, technology, engineering & math) and ag-related career. Each 45–60-minute tour featured a live tour of facilities and encouraged viewers to ask questions that would really make them feel as though they were really on a tour. A host and virtual host from the team monitored the chat, observed youth interactions online, and guided the presenter throughout the program. This provided a stress-free environment for presenters who were not as comfortable with Zoom technology.

To entice teachers and youth to attend, multiple forms of marketing was used. Trip-based flyers were created for social media and through statewide teacher and Extension listservs.
The Nebraska 4-H website was utilized for viewers to register and hold links for past trips found on the Nebraska 4-H YouTube channel.

Extended learning opportunities were created for many of the field trips which provided assignments teachers could require students to complete.

Results

All team members spent a significant amount of time on each trip. Pre-trip arrangements, including contacting potential presenters, arranging recording times, marketing, etc, take on average 5-10 hours. The trips themselves are 45 min to an hour long. Post trip items, such as putting videos on YouTube, creating Extended Learning Opportunities, and updating the web page, average 2-3 hours. With 17 trips taking place in 2020, this is combined effort of approximately 200 hours from all team members.

Starting March 31st, the first Virtual Field Trip featured solar power. Trips were organized every week from March 31st until May 12th. Other topics during the spring semester included plant propagation, the US Meat Animal Research Center, wind power, a local meat locker, waterpower, and biofuels.

During the summer, without usual programs occurring, trips were offered which showcased science and agriculture events that happens during the summer. Numbers were much lower; however, teachers can utilize the recordings. These were done once per month with topics of big horn sheep, horse training, Nebraska fisheries systems, and the Lincoln Children's Zoo. During the 2020-21 school year, they are offered twice a month and focus on timely topics within ag and science industries. Topics have included equine medicine, embryo flushing, sugar beet production, shrimp farming in Nebraska, crop scientists, etc.

Trips have been led by UNL faculty and local business and industry experts. Each session allows for live viewers to learn about career opportunities, ask questions, and observe daily tasks that might be done for that particular career. To date, 22 field trips have been completed and are available for teachers to complement their curriculum on demand. Nebraska FFA State Convention is virtual in 2021 and the Nebraska Department of Education plans to promote these field trips as an option for youth to participate. This alone has the potential to reach 193 schools across Nebraska, as agricultural education provides opportunities to over 20,000 young people each year.

Impact

Between March and December of 2020, 17 Virtual Field Trips have been evaluated. During that time, tours have had 536 live youth viewers, 153 adult live viewers, and 61 unspecified live viewers for a total of 750 live viewers. During these trips, live viewing audience has been primarily from Nebraska. However, many neighboring states were also reached as well as Utah, Kentucky, Montana, Utah, Texas, and Wisconsin and internationally reached audiences in Canada and Brazil. Using YouTube demographics, trips have had a combined 2,202 hits on the YouTube recordings with an average 23% completion rate of the tours for an additional 506 viewing sites.

While tours were originally created to assist teachers during the difficult instruction times during COVID-19, tours have greatly impacted youth across the state of Nebraska. Youth have the ability to see people and careers all across the state without the cost and time commitment required to travel the 430 miles east to west border or 210 miles to north and south borders. Spanning two time zones can also be a logistical challenge when traveling to various locations across the state. The field trips have proved unique experiences to all youth across the state while also improving the access, equity of exposure, and opportunities to learn outside of their community or surrounding areas especially for the large number of youths living in rural areas.

Evaluation

At the end of each tour, viewers are asked to complete a brief survey. From this tool, 100% of viewers have learned about a new career or something new about this career. Seventy-one percent are interested in pursuing a STEM or ag career in the future. Only 57% of those taking the survey say they think STEM or ag careers are available in their community. Significant reports from teachers and parents have said this was very timely information and they appreciate the efforts to make these tours happen. Some unsolicited comments received include:

- Doniphan-Trumball Teacher – “GREAT trip, once again you have put on an EXCELLENT activity. Keep up the great work.”
- Kearney High Teacher – “Thanks so much for helping to put on this event this morning! It was definitely a great learning experience for students as we are out of the classroom and it is tough to find learning opportunities like these!”
- Eustis-Farnum Teacher – “I have used these trips with several of my classes. I love having the ability to go back and show them later!”

As this program continues, more evaluation data will be compiled. In March of 2020, the goal was to rapidly create programs teachers could use and it is clear from numerous teachers, these have created value to their programs and will continue indefinitely.