

# Phenomena Found in Agriculture

## Free Livestreaming Events



### Overview

These **FREE** events will provide participants with an introduction to storyline routines while connecting educators with geneticists, animal scientists, ecologists and more! Aligned to NextGeneration Science Standards (NGSS), each event provides immediate classroom applications and access to agricultural storylines.

As a result of these events, participants will be better equipped to navigate the shifts in practice laid out in NGSS. Each event will be an opportunity to explore three-dimensional instruction and reflect on instructional shifts with the support of instructional units steeped in real-world context.

### Supporting Materials

Under the guidance of Northwestern University's NextGen Storylines team, the American Farm Bureau Foundation for Agriculture has developed storylines that use phenomena found within food production agriculture as context for student exploration. **These materials are currently under review by NextGenScience to be considered for an NGSS Design Badge.**

The following professional groups provided support in the development of these units:

- Northwestern University's NextGen Storyline Team
- University of Nebraska–Lincoln IANR faculty
- Agricultural Research Service (ARS)
- Achieve

### Highlights

- **Cost: Free**
- **What:** Livestreamed Science Events
- **Who:** Middle and high school science educators and curriculum coordinators
- **Where:** Zoom
- **When:** July 21 and July 23, 10 am CST
- **Registration:** [onthefarmstem.com](http://onthefarmstem.com)
- **Credit Options:** CEU & Graduate

Pick one, or both!

### High School - July 21

#### Guest Speakers include:

- Dr. Matt Sprangler - Beef Genetics Specialist at University of Nebraska-Lincoln
- Dr. Alison Van Eenennaam - Animal Biotechnology and Genomics at University of California Davis

### Middle School - July 23

#### Guest Speakers include:

- Peg Kohring - Conservationist
- Dr. David Augustine - Ecologist at USDA Agricultural Research Service



Curriculum and professional development experience are made available by the American Farm Bureau Foundation for Agriculture, a 501(c)3 nonprofit organization, as a contractor to the Beef Checkoff with funding from the Cattlemen's Beef Board.

## Unit Descriptions

### **How can we design cattle to better meet human needs?**

In this high school Storyline unit on genetics and heredity, students are introduced to “SuperCows”. As students explore the vast variety of cattle breeds, they discover that cattle are specialized for different purposes. While similar, SuperCows are clearly unique. Students are encouraged to wonder what causes this diversity and specificity, which leads to investigations about the role of inheritance, DNA, and proteins.

### **What do prairie chickens need in order to survive today’s prairies?**

This middle school Storyline unit covers ecosystems, animal behavior, and symbiosis. Students are challenged to figure out why prairie chickens have a very unique dance, and understand the role cows play to help ensure the dance takes place. Using this approach, students engage in science concepts to help ensure the survival of the prairie chicken.

## Teacher Testimonials

### **Here’s what other teachers are saying:**

**This training has been invaluable. It has challenged my teaching and allowed me growth in areas that I did not know I needed to grow.** It has allowed me to understand and use questioning strategies that encourage my students to be in charge of their own learning.

Sheli Wagers, Middle School Science Teacher,  
Salem-Keizer Public Schools, Oregon

**In my opinion, this is NGSS at its best – integrated, hands-on, fun, and relevant.** I’ve had the pleasure of visiting our teachers piloting this unit, and they are doing amazing work with it. The lessons really make the students think deeply about the material, analyze their data and work, and revise their models regularly.

Mark J. Madland, Secondary Science/STEM Program Associate,  
Salem-Keizer Public Schools, Oregon

When I look back this training, the key thing that comes to my mind is **a new way to look at teaching that is more inquiry-based** and causes the students to focus on what they have learned in the past to help broaden their education.

Reta Yanik, FFA Advisor and High School AgriScience Teacher,  
Mesa Public Schools, Arizona

**The training provided to the participating educators in Milwaukee was the turning point in finding a creative and successful way to re-engage my students, and I am forever thankful to have been a part of this process.**

Justen Ollendick, Agricultural Education Instructor  
& FFA Advisor, Globe Unified School District, Arizona

**This method of teaching genetics gave me snapshots of how my students’ thoughts changed from lesson to lesson.** Their conceptions became increasingly complex from one lesson to another. I am thankful that I had the materials and support to help me be a better teacher!

Patti Howell, High School Science Teacher,  
Baconton Community Charter School, Georgia

### **Contact Information**

If you would like more information, please contact Brian Beierle at [educationdirector@fb.org](mailto:educationdirector@fb.org).



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