

# Friday Notes

Council for Agricultural Science and Technology

CAST

The Science Source for Food, Agricultural, and Environmental Issues

*Friday Notes* is designed to enhance communication among various agricultural sectors, educators, students, and the public who are interested in a variety of plant, animal, food, and environmental issues. *Friday Notes* advocates the pursuit of credible, unbiased, science-based information. Material contained in linked articles is from the original authors and does not necessarily reflect the views of the CAST organization.

## In This Issue..... Click to Read

[Gabe Middleton Chosen as CAST President-Elect--P. 2](#)

[Animal Agriculture News--Trade, Markets, and Research](#)

[Food Science and Safety News--Will a Yogurt a Day Keep the Doctor Away?](#)

[Plant and Environment News--Special Focus on Crop Protection](#)

[International News--New Trade Deals](#)

[General Interest News--Precision Ag and Misleading Jargon](#)

## 2017 World Pork Expo



The competition in the show ring was lively as [youngsters guided their pigs](#)--or was it the other way around?

## Science Breakthroughs

[Science Breakthroughs 2030](#) is a project to identify the most compelling research directions in food and agriculture. [Check here for a timeline](#) of the organization's activities and milestones.

## National Pollinator Week June 19-25

Pollinators like [honey bees](#), [butterflies](#), [birds](#), [bats](#), and [other animals](#) are hard at work providing vital but often unnoticed services.

June 16, 2017

## Biotech Debate Evolves

*Gene editing the "fabric of life"*

For several years, we have been writing about the "wow factors" that gene editing techniques (specifically CRISPR/Cas9) are bringing to science and technology. The possibilities are deep and wide--and a quick internet search provides articles and opinions that reflect optimism, wonder, and sometimes fear. The following links provide insights into this amazing technique:

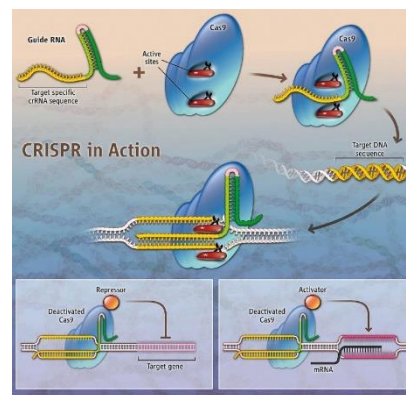


\*\*This 10-minute [video looks at CRISPR, a breakthrough in gene editing](#) that "gives humans unprecedented access to the source code of life." The segment focuses on Jennifer Doudna, a pioneering co-inventor behind the technology that could "fix diseases that have no cure and change life as we know it."

\*\*This article looks at [the evolving debate about biotechnology](#)--and it includes insightful comments from these prominent scientists: Alison Van Eenennaam, Kevin Folta, and C. S. Prakash. All three have been recipients of the [Borlaug CAST Communication Award](#).

\*\*According to this report, scientists have successfully inserted a tuberculosis-resistant gene into the bovine genome, without any off-target genetic effects--the hope is that sometime in the future, [calves might be genetically resistant to bovine TB](#).

\*\*Some state that using the CRISPR-Cas9 technique may cause unexpected mutations to occur, but key scientists are dismissive of the claims, and



## WHY DOES BEE HEALTH MATTER?

CAST Commentary Rollout Coming June 19th in Washington, D.C.



CAST

### Bee Health Events

At [three June 19th presentations in the nation's capital](#), the Council for Agricultural Science and Technology is releasing a CAST Commentary titled *Why Does Bee Health Matter? The Science Surrounding Honey Bee Health Concerns and What We Can Do About It*.

### Dairy Bootcamp

Land O'Lakes Inc. [launched an entrepreneurship program](#) aimed at developing a wave of U.S.-based dairy food start-ups.

### Trees and Habitats

The Great Plains Society of American Foresters carries on a tradition to [buy and plant new trees at Habitat for Humanity homes](#) in Kansas and Nebraska.

### Food Evolution

The film [Food Evolution](#) explores the controversies surrounding biotech foods. [This article includes information about](#) (1) the movie's debut, (2) the award-winning director, and (3) insights from Mark Lynas, a well-known speaker and writer.

### CAST Social Media

Click here for [links to CAST sites](#): Twitter, Facebook, LinkedIn, Pinterest, videos, and blogs.

they are [refuting the criticism](#).

**\*\*In this short video**, Neil deGrasse Tyson discusses how [biology is being transformed by CRISPR technologies](#).

## News and Views

**\*\*Research Funds and the Farm Bill:** Debate [focused on available funding for research](#), as the Senate Ag Committee held its fourth hearing on the 2018 Farm Bill. At the hearing, some of the biggest names in agricultural research [defended the importance of government science funding](#).

**\*\*Beef Deal:** United States and Chinese [negotiators finalized a deal](#) to lift China's 13-year ban on U.S. beef, the USDA announced.

**\*\*NAFTA Hopes and Fears:** Two leading dairy groups say they hope a modernized [North American Free Trade Agreement](#) (NAFTA) can increase U.S. dairy exports, create jobs, and build business partnerships. They also contend that withdrawing from NAFTA could devastate the U.S. dairy industry.

**\*\*FFAR and Ag Research:** Congress established the Foundation for Food and Agriculture Research (FFAR), and this editorial says the public-private partnership is positioned to put America back on top as a global leader by [accelerating problem solving on behalf of U.S. agriculture](#).

## News from the Far Side of the Barn

**Will Climb for Food:** These domestic goats live in southwestern Morocco, and they climb trees for food. [Researchers say the trees benefit, too](#).



Don't park under this tree.

**Squeeze, Don't Pull (video):** This flim-flam artist [explains how milking an almond](#) is just like milking a cow.

**Pyrosome Mania:** Millions of bizarre jellyfish-like [bioluminescent sea creatures](#) are gumming up research nets, glomming onto fishing hooks, and cascading onto beaches along the U.S. West Coast.

## Gabe Middleton Takes on CAST Leadership Role

*CAST President-Elect for 2017-18*

In a recent election at the Council for Agricultural Science and Technology, Gabe Middleton, DVM, was [chosen as the President-Elect for 2017-2018](#). Dr. Middleton has been involved with CAST since 2014 as the board representative for the American Association of Bovine Practitioners. He also serves as the vice chair for the Animal Agriculture and Environmental Issues Work Group and the task force board liaison for the forthcoming publication titled "Social and Economic Impact of Misinformation in Agriculture."



Dr. Middleton began working at a dairy farm in northeast Ohio at the age of 12, where he became interested in veterinary medicine and agriculture. The experience on the dairy farm led him to appreciate how difficult making a living in agriculture can be and how farmers need the help of technology to improve the health and productivity of their operations. Following graduation from The Ohio State University College of Veterinary Medicine in 2008, he joined Orrville Veterinary Clinic in Orrville, Ohio. His area of expertise is in large animal medicine, specifically dairy cattle, with a focus on milk quality, calf health, and proper drug use and residue prevention. He also serves as a calf ventilation consultant, designing systems all across the northeastern United States.

He has received inspiration for his work with CAST through Dr. Norman Borlaug's vision, as well as the enthusiastic and engaged leadership of CAST and the Board of Representatives. He plans to continue that enthusiasm by implementing the excellent ideas proposed through the Strategic Planning Committees. His vision for CAST also includes not only providing CAST information through social media, but also designing tools to help people improve social media skills and convey messages in a more effective manner.

Middleton will officially assume his responsibilities as President-Elect at the conclusion of CAST's fall board meeting in October. In 2018-2019, he will become the 46th president of CAST, a singular honor and responsibility dating back to 1972, when Charles A. Black and Norman Borlaug, along with other committed scientists, spearheaded the movement to "bring science-based information to policymaking and the public."

## Friday Notes News Categories

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P. 1 CRISPR graphic from nature.com, gene editing diagram from doublexscience.org, and the goat pic from cbsnews.com. Animal Sec. cow cartoon from LactoseCowGraphic.jpg. Food Sec. ugly food pic from kidspot.com. Inter. Sec. food pic from npr.org. Gen. Sec. alpaca pic from islandalpaca.com. Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service.



### *Animal Agriculture and Environmental News*

**High-tech Herding:** Using a receiver about the size of a sheet of paper, as many as 62,000 cattle spread across two miles can be [electronically tracked and analyzed](#) for even the most subdued signs of illness.



**Pork and Global Markets (video):** During the 2017 World Pork Expo, the [pork industry stressed the importance of trade](#) and expanding trade markets.

**Gassy Cows and Playful Pigs:** This blog, *Bovine Emissions and Pig Personalities*, includes research about [green cows--and pigs that fly](#), steal beer, and play computer games.

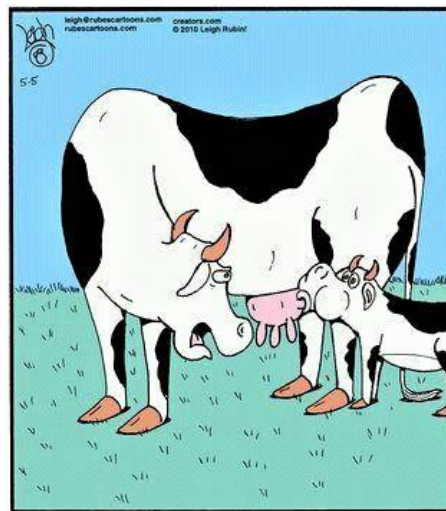
**Avian Flu and Trade Deals:** This study looks at the [impacts of the 2015 highly pathogenic avian influenza outbreak](#) in the United States--and the trade deals that may have lessened the damage.

**Research about Avian Diseases (video):** A team of researchers at Iowa State is collaborating with experts at the University of Edinburgh to [combat avian pathogenic \*E. coli\*](#).

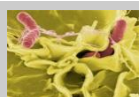
**Antibiotics Alternative?** Researchers show that it might be possible to develop an [alternative to antibiotics for treating diseases in pigs](#). If trials in pigs work, the new therapy could be extended to treat people.

**Money and Manure:** This farmer installed a solid separation system to [decrease costs and improve the use of manure](#) on his dairy farm.

**One Good Turn Deserves Another:** With the use of animated graphics, this article instructs cattle handlers about [proper techniques to use when moving the herd](#).



"For the last time, Junior, stop blowing milk bubbles! ... You're giving me gas!"



## Food Science and Safety News

**A Slowdown on Certain Label Requirements:** The FDA has [delayed the deadline for food companies](#) to adopt a new "nutrition facts label" and a rule that requires chain restaurants to post calories.

**Twisted Citrus-glazed Carrots:** Does [labeling make certain foods more enticing](#) and increase vegetable consumption?

**Report about Animal Welfare Perceptions and Marketing:** Consumer attitudes regarding animal welfare pose challenges for retail and food service marketers, but they also [provide opportunities for new products and marketing strategies](#).

**A Yogurt a Day?** University of Nebraska-Lincoln researchers are investigating the gut microbiome and looking at the way [fermented foods might be a beneficial boost](#).

**Milk and Vitamins:** New university research sheds light on vitamin K and its significant [presence in some dairy products](#) available in the United States.

**Keeping Mold Off Those Blueberries:** This site includes information about the [storage and use of blueberries](#). And this link leads to [an infographic that displays facts](#) about the



This California company delivers "imperfect" produce from growers seeking secondary markets to millennial [consumers concerned about food waste](#).

popularity of blueberries.

**Supply and Demand:** According to this analysis, produce processors and retailers find it more and more [difficult to sufficiently stock organic produce](#) because U.S. demand continues to outstrip supply.

**Picking the Right Ears and Knowing What to Do with Them:** An expert on corn provides some tricks she has when it comes to [selecting, buying, and preparing the golden vegetable](#).



## *Plant Agriculture and Environmental News*

### **\*\*\*Crop Protection Feature:**

This is the height of the growing season for much of the world, and food producers are focused on protecting their crops from weeds, pests, and diseases. This blog, *Fighting for Food Security*, [features links to research and reports](#)--with a focus on integrated pest management, biodiversity, and technology.

**Converting Solar Energy:** A molecular system for artificial photosynthesis is designed to [mimic key functions of the photosynthetic](#) center in green plants--light absorption, charge separation, and catalysis.



**Soil Fertility Changes:** This study shows that [fertilizer and lime applications have measurable impact](#) on soil fertility in future growing seasons.

**Research Assessment Controversy:** A study of pesticides in the United States produced information about glyphosate, but [the data was not considered](#) by the International Agency for Research on Cancer in 2015 when it assessed whether or not glyphosate causes cancer.

**Identifying the Enemy:** This low-cost method--known as quantitative PCR--can [detect genetic variations unique to Palmer amaranth](#), even when flooded with samples from closely related species.

**Lots of Rings on These Trees:** A Great Basin bristlecone pine in California named Methuselah comes in at 4,850 years old--but an unnamed bristlecone is pegged as the [oldest on earth at 5,067 years old](#).



## *International News*

**Food, Tech, and High Prices (video):** This restaurant in Japan features the latest technology in projection mapping and sound to [give diners a multisensory experience](#).

**Fishing for Healthy Fatty Acids:** A leading seafood company based in Bergen, Norway, will start producing [salmon products rich in healthy fatty acids](#)--with a reduced usage of scarce marine raw materials.

**Recent Trade Deals:** After agreeing to protocols for shipments of U.S. beef into the country, [China approved two new varieties of biotech](#) crops for import.

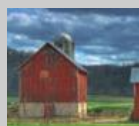
**World Food Barn:** Indonesia's agriculture minister contends that [his country will become a world food barn in 2045](#)--they are working to increase the production of 11 strategic farm commodities.

**A Fierce Famine (opinion):** According to this writer, [six million people are at risk of starvation](#) in Somalia--and another fourteen million in South Sudan, Nigeria, and Yemen.

**The Meaning of Milk:** The EU Court of Justice confirmed a ban on products of a "purely plant-based substance" using milk, cream, butter, cheese, or yogurt as a marketing tool--[terms reserved by EU law for milk of animal origin](#).



Hong Kong is a rabbit's warren of eateries offering all manner of dishes--from snake to turtle--and this reporter looks at the [psychology behind why we eat what we eat](#).



## General Interest News

**Better Farmers Than Humans? (video):** Leaf-cutter ants plant, water, and climate control their nests to provide an ideal environment for the fungus they grow for food. Their [literal ant farms are amazing](#).

**Tech, Food, and Consumers:** Will shoppers [trade touch and smell for convenience](#)?

**Hidden Jargon in Science Communication (opinion):** Statistics sometimes [contain hidden jargon](#)--words such as "random" and "uniform." This writer worries even more about words that go unrecognized as jargon.

**Precision Ag for Varied Farm Types (opinion):** This Ohio State University expert discusses [seven top precision agriculture technologies](#).

**The Lassie Effect:** This article contends that [owning a dog is good for health](#) insofar as the owner actually takes the pooch on a daily walk, thus increasing both their exercise levels.

**Drones--Thumbs Up or Down?** A Drone Flight Calculator is an online tool to [help farmers determine their return on investment using drones](#). Farmers input data to see if drones can improve their decision making and/or cut costs on their farm.



[Hobby farming is on the rise, especially among retirees.](#)



Check out CAST's page at the [YouTube site](#) to view highly regarded ag-science videos about probiotics, food safety, and water issues--or the latest video dealing with proposed mandatory labeling of GMO food items.



If you have a good idea for a CAST publication, contact us by [clicking HERE for the "Proposal Format](#) and Background Information Form."

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## Societies, Companies, and Nonprofit Organizations Serving on the CAST Board of Representatives

- \* American Association of Avian Pathologists
- \* American Association of Bovine Practitioners
- \* American Bar Association, Section of Environment, Energy, & Resources-Agricultural Management
- \* American Dairy Science Association
- \* American Farm Bureau Federation
- \* American Meat Science Association
- \* American Meteorological Society, Committee on Agricultural and Forest Meteorology
- \* American Seed Trade Association
- \* American Society for Nutrition Nutritional Sciences Council
- \* American Society of Agricultural and Biological Engineers
- \* American Society of Agronomy



- \* American Society of Animal Science
- \* American Society of Plant Biologists
- \* American Veterinary Medical Association
- \* Aquatic Plant Management Society
- \* BASF Corporation
- \* Croplife America
- \* Crop Science Society of America
- \* DuPont
- \* Elanco Animal Health
- \* Entomological Society of America
- \* Innovation Center for U.S. Dairy
- \* Land O'Lakes
- \* Monsanto

- \* National Corn Growers Association/Iowa Corn Promotion Board
- \* National Milk Producers Federation
- \* National Pork Board
- \* North Carolina Biotechnology Center
- \* North Central Weed Science Society
- \* Northeastern Weed Science Society
- \* Poultry Science Association
- \* Society for In Vitro Biology
- \* Soil Science Society of America
- \* Syngenta Crop Protection
- \* The Fertilizer Institute
- \* Tyson Foods
- \* United Soybean Board
- \* Weed Science Society of America
- \* Western Society of Weed Science

*CAST assembles, interprets, and communicates credible, science-based information regionally, nationally, and internationally to legislators, regulators, policymakers, the media, the private sector, and the public.*

## Members of CAST's Education Program

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- \* Texas A&M University College of Ag & Life Sciences
- \* The Ohio State University
- \* University of Arkansas System Division of Agriculture
- \* University of California-Davis
- \* University of Florida Institute of Food and Agricultural Sciences
- \* University of Kentucky
- \* University of Nebraska Agricultural Research Division
- \* University of Nevada



Note: WinField Solutions (Land O'Lakes) provides sponsorship for the distribution of *Friday Notes* to the National Association of Agricultural Educators.

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