



*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 CAST.

July 26, 2019

## Gene Editing and the Public

CRISPR and related techniques may be "everywhere," but many in the general public are still unsure about the procedures and the significance. Gene editing has been in the news for decades, with headlines touting everything from beneficial medical advances to suspicious *Brave New World* allusions. Scientists have generally been positive about the methods, with many possible agriculture and food production applications in the works. A CAST Commentary in 2011 focused on the topic of [genetically engineered animals](#), and the organization has used publications, social media, and *Friday Notes* links to help inform readers (see the first link in the "News" section below, the genome editing publication impact report on page two below, and various links in this newsletter). Here are a few of the many recent releases about gene editing:



- (1) This site provides various [links related to CRISPRcon 2019](#).
- (2) A new paper from Europe explores how scientists can use CRISPR to [enhance traditional plant breeding techniques](#) with the goal of ensuring global food security.
- (3) Kansas State University researchers are developing ethical and responsible ways to use CRISPR to improve our world, [from developing new wheat varieties to fighting animal diseases](#).
- (4) This opinion piece looks at ways to [gain wide consumer acceptance](#) of GMO foods.
- (5) And this article says that science is one thing, but [political and social issues remain](#).

## News and Views

**Biotech Regulations:** USDA, EPA, and FDA experts say [they are working to streamline biotech regulations](#). A proposed USDA rule would exempt biotech if they can be produced using conventional breeding techniques. Note: Check out CAST's Issue Paper about [genome editing and governance](#)-also, more below on page 2.



**Possible SNAP Changes:** The administration wants to [change the way states determine who qualifies for the Supplemental Nutrition Assistance](#)

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

[Impact Reports for Gene Editing and Free-Range Poultry Papers--P. 2](#)

[Animal Agriculture News](#)

[Food Science and Safety News](#)

[Plant and Environment News](#)

[International News](#)

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### Drone Views



This year's [Drone Awards for photography](#) include shots of a mesmerizing ancient town in Algeria and a hot springs in Yellowstone.

### Ag Student Careers

A federal grant is helping Mississippi State agriculture students [apply virtual reality technology to train for high-tech careers](#) in environmental control.

### We Have Two Questions For You

- 1) What CAST information do you like to share?
  - 2) How should we share information about our publications?
- Answer this [anonymous survey](#).

### Soybean Field Day



The Iowa Soybean Association is hosting a field day to explore the 4R's and other [practices to improve nutrient management](#)--August 7 at Olin, Iowa.

### Forage Management

The Purdue Forage Management Day will offer [informative speakers and sessions](#)--August 7 at the Feldon Purdue Agricultural Center.

### Making Contact

The North Carolina State A&T extension program makes nearly [half a million face-to-face and indirect contacts](#) with North Carolinians annually.

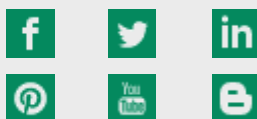
### #RealPigFarming

The Pork Checkoff selected 13 college students to [represent the #RealPigFarming Student Social Forces Team](#) this year.

### Send in Ideas

CAST [welcomes suggestions](#) for future publications and projects.

### CAST Social Media



[Program](#) (SNAP, also known as food stamps). The USDA estimates that 3 million people would lose their food assistance as a result.

**Preserving Diversity:** [Livestock genetic diversity](#) is being preserved thanks to the Agricultural Research Service National Animal Germplasm Collection (related link below).

**Protecting Food Animal Gene Pools for Future Generations:** This forthcoming [CAST issue paper will address the vital need to protect genetic diversity](#) in a time when disease or future climate change could unexpectedly decimate the small number of breeds the world depends on for food. The paper will be presented in late September.

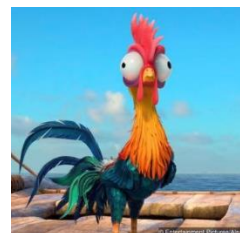
## News from the Far Side of the Barn

### Close Encounter (tense video):

A 9-year-old was injured (but she will recover) after a [bison sent her flying into the air](#) at Yellowstone National Park.

**Bison, Tourists, and Selfies (videos):** More proof that tourists [should not cuddle up to bison](#), and another link demonstrating that [bison are not into selfies](#).

**On Eagle's Wings (video):** An [eagle snatched a GoPro](#) and took it for a ride.



A man demonstrates [how to hypnotize a chicken](#). Warning--it could come back to bite you.

## Impact Reports

### The Influence of CAST Publications

#### Genome Editing in Agriculture: Methods, Applications, and Governance



On July 9, 2018, Dr. Adam Bogdanove gave a presentation to an audience at the Association of Public and Land-grant Universities offices about the CAST Issue Paper [Genome Editing in Agriculture: Methods, Applications, and Governance](#). This publication describes how genome editing is performed, the types of "edits" that can be made, how the process relates to traditional breeding and conventional genetic engineering, and the potential limitations of the approach. Bogdanove, the Task Force chair, conducted briefings for House staffers at a noon National Coalition for Food and Agricultural Research (NC-FAR) lunch seminar, followed by a presentation to Senate staffers in the afternoon.

The press release went to 8,771 e-contacts (3,322 media) resulting in 4,239 opens/interactions and 299,613 headline impressions. The publication has been downloaded more than 6,880 times, and more than 1,310 Ag quickCASTs have been accessed. A video of Bogdanove's presentation and slides is [available here](#).

## *Impact of Free-Range Poultry Production Systems on Animal Health, Human Health, Productivity, Environment, Food Safety, and Animal Welfare Issues*

[This CAST Issue Paper](#) was rolled out one year ago, and it reviewed what is known about poultry egg and meat production with specific attention to available research on free-range production systems.

On July 18, Drs. Jacquie Jacob and Tony Pescatore, the Task Force cochairs, gave a breakfast presentation to an audience at the Food Marketing Institute offices, followed by a panel discussion. They then conducted briefings for House staffers at a noon NC-FAR lunch seminar, followed by a presentation to Senate staffers in the afternoon.

The press release went to 10,170 e-contacts (2,196 media) resulting in 3,859 opens/interactions and 362,792 headline impressions. The paper has been downloaded more than 2,850 times, and more than 1,175 Ag quickCASTs have been accessed. A video ([rollout presentation and informative slides](#)) is available here.



## Friday Notes News Categories

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P. 1 drone pics from msn.com, CRISPR graphic from sciencemag.org, and lab pic from theatlantic.com. Animal Sec. man and pig photo from porkbusiness.com and vulture pic from drovers.com. Food Sec. conference photo from foodsafetynews.com. Plant Sec. plant pic from theconversation.com and university pic from tuskegee.edu. Inter. Sec. dairy pic from thetelegraph.com and plastic pic from telegraph.co.uk. Gen. Sec. rodeo photo from BobClick.calpoly.edu and space photo from today.com. Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service or CAST.



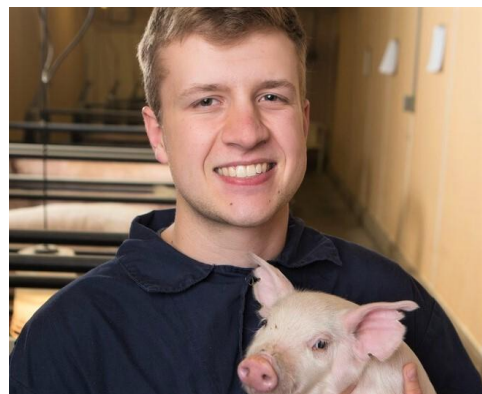
## *Animal Agriculture and Environmental News*

**Understanding Beef Production Practices:** More than 700,000 beef farmers and ranchers in the United States raise wholesome and nutritious beef, and this site [looks at the varied practices they use](#).

**Pork Conference Talking Points:** One of the key points from the [National Pork Industry Conference](#) focused on the efforts to keep African swine fever out of the United States.

**Chicken--Versatility, Value, Variety:** This consumer survey explores the [drivers for grocery purchases of chicken](#).

**Veterinarian Challenges:** Food-animal veterinary medicine faces [two key human-resource challenges](#)--a shortage of veterinarians in some rural areas and burdensome debt for recent graduates. Note: The CAST Issue Paper *Impact of Recruitment and Retention of Food Animal Veterinarians on the U.S. Food Supply* will be rolled out later this year.



Selected as the "2019 Pig Farmer of Tomorrow," this University of Missouri student says [attitude is the key to success](#). He plans to run a small, diversified family farm that includes pigs, cattle, and grain production.



**To Meat or Not to Meat:** Dr. Frank Mitloehner joins "AdaptNation" podcast host Steve Katasi to discuss "[our food choices and climate change](#)."

**Clearing the Air:** A global company says its new feed additive for dairy cows will [reduce methane emissions](#) by approximately 30%.



**Lamb Chops on Their Menu:** Vultures and bald eagles [routinely kill this rancher's lambs](#). Possible solutions include loud noises, pyrotechnics, shooting, and husbandry practices.

**Where the Pigs Are:** The 2017 Census of Agriculture shows the [number of hogs produced in the United States is climbing](#). By far, the largest number are in Iowa, but North Carolina claims the top two most pig-populated counties.

## *Food Science and Safety News*

**Buying "Clean Food":** This article gives [quick advice about how to shop](#) for "clean food" at the grocery store, and this editorial provides suggestions about [how to handle the "food-aisle blitz"](#).

**All in the Timing?** These researchers say that [meal-timing strategies](#) such as intermittent fasting or eating earlier in the daytime appear to help people lose weight.

**Milky Nutrition:** According to this research, [milk boosts bone health](#) beyond supplying calcium.

**Cow Milk DNA--Vegan Friendly:** An [ice cream company using cultured dairy](#) to make their product sold out of its \$20 pints in hours. One co-founder says the dairy-like "vegan" product is nutritionally identical to cow's milk.



FDA and USDA officials appeared at the International Association for Food's annual conference, and they spoke of a "[new era of food safety](#)."

**AI in the Kitchen:** Food industry representatives are [embracing artificial intelligence](#) to better understand the dynamics of flavor, aroma, and other factors that go into making a food product a success.



**What and Why:** Purdue professor Lisa Mauer (recipient of the 2019 Institute of Food Technology Research and Development Award) [unravels the mysteries of the processed food](#) consumers find in grocery aisles.

**Meat Label Issues:** A growing number of [states have been passing laws](#) saying that only foods made of animal flesh should be allowed to carry labels like "meat," "sausage," or "burger."

**Process Labeling:** Click here to [access CAST Issue Paper #56](#), *Process Labeling of Food: Consumer Behavior, the Agricultural Sector, and Policy Recommendations*.

## *Plant Agriculture and Environmental News*

**Climate Report:** A USDA report sees dire [climate-change impacts on U.S. crops](#). Computer models project harsh forecasts based on the impact of greenhouse gases. Click here to [access the USDA report](#).

**Food, Sustainability, and GMOs:** Nebraska Corn Board's Corn Talk dives into food [innovations that are helping to produce quality food](#) while improving sustainability--including a section about GMOs.

**Who'll Stop the Rain?** Monsoon [rain storms have become more intense](#) in the southwestern United States in recent decades, according to a study from Agricultural Research Service scientists.

**Smart Irrigation:** Cornell researchers are use a [smart irrigation model to predict rainfall](#) and conserve water.



**Hemp Production in Alabama:** Tuskegee University will be one of five Alabama universities licensed by the state to [grow and study industrial hemp plants](#)--a non-intoxicating cannabinoid.

**Plant of Horror:** A Penn State/Virginia Tech study found that [a parasitic plant has stolen more than 100 functional genes](#) from its host plant. Researchers say this is one of the most dramatic cases ever found in complex organisms.



Flicking the lights on and off can [save energy without hurting indoor agriculture harvests](#), as growers look for economical methods.

## International News

**Lettin' It Stew (video):** For 45 years, a restaurant in Thailand has been [cooking and serving the same soup](#) from the same large pan--and customers love it.

**Dutch Ag Technology (video):** Machines are taking over many mundane farming tasks in the Netherlands, and the tech-minded country has become the [world's second-biggest food exporter](#).

**Seed Missiles (video):** A project in Myanmar [using drones to fire "tree seed missiles"](#) into remote areas is showing positive results.

**Countering Misinformation:** The British public will be exposed to more [positive messaging about meat](#) thanks to a new campaign.



**Plastics from Aspirin?** Japanese researchers are working on a plastic that could be [made from and degrade to a natural product](#).



A [massive dairy operation in Qatar](#) provides enough milk for the domestic market, in addition to making products such as cheese and yogurt.

**A Mighty Wind:** Kenya launched [Africa's largest wind power farm](#) in a bid to boost electricity-generating capacity and to meet the country's ambitious goal of 100% green energy by 2020.

**Plastic from Food Waste?** The British government announced [funding to develop biodegradable packaging](#) to prevent pollution.

## General Interest News

**Surf's Up on the Desert Plain (video):** In the desert, [flash floods arrive with speed](#) and power.

**Farmers and Media (video):** Some farmers make more money [advocating for the industry on social media](#) than actually farming--including a Minnesota grain farmer and a first-generation producer known as the WT Farm Girl.

**Biotech Wonders:** This article lists what they call the "[seven wonders of the biotech world](#)"--from cloning to gene therapy to thought control.

**Powered by Sunlight:** Cal Poly students are [helping a spacecraft make history](#), as it attempts to become the first spacecraft to travel solely by sunlight around Earth's orbit.



**My Peanut Butter Is Floating (video):** Fifty years after Apollo 11, here is [what \(and how\) astronauts are eating](#).

**Veterinary Astronaut:** This North Carolina State adjunct professor was NASA's [first veterinary astronaut](#). His many tasks included spacewalking. He also studied at The Ohio State University and taught at Texas A&M.



The Poly Royal Rodeo (Cal Poly University) was named the [Regional Rodeo of the Year](#), and the university is also home to the rodeo national coach of the year.

## CAST Information

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.



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- \* American Association of Bovine Practitioners
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- \* 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
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- \* CropLife America
- \* Crop Science Society of America
- \* Entomological Society of America
- \* Innovation Center for U.S. Dairy
- \* Land O'Lakes
- \* Bayer

- \* National Cattlemen's Beef Association, a Contractor to the Beef Checkoff
- \* 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
- \* Rural Sociological Society
- \* Society for In Vitro Biology
- \* Soil Science Society of America
- \* Syngenta Crop Protection
- \* The Fertilizer Institute
- \* Tuskegee University
- \* Tyson Foods
- \* United Soybean Board
- \* University of Nevada-Reno
- \* Weed Science Society of America
- \* Western Society of Weed Science

*CAST, through its network of experts, assembles, interprets, and communicates credible, balanced, science-based information to policymakers, the media, the private sector, and the public.*

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