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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.

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Gongxi, Gongxi



As the lunar pig takes center stage, this [CAST blog](#) looks at some perceptions about this particular Chinese New Year star.

Celebrate Agriculture

[National Agriculture Day](#) will occur on March 14.



Women in Agriculture Conference

Two nationally recognized supporters of agriculture are keynote speakers at the 2019 [Midwest Women in Agriculture Conference](#) Feb. 20-21 in Indiana.

Agriculture Careers

This USDA resource provides [information about various agriculture careers](#).

Send in Ideas

February 8, 2019

The Tech Factor

Innovations in the digital fields of agriculture and other areas

Sometimes it seems that the future of agriculture is rooted as much in digital clouds as it is in the "good earth." Farmers are more likely to reach for tech devices than feed buckets or pitchforks, and advances in smart machines and genome editing portend an ever-changing food production landscape.



This [article looks at key "ag-tech trends"](#)--including the impacts of precision agriculture and the influence of millennials. Another feature article focuses on the [ways artificial intelligence could transform agriculture](#).

Many societies and companies focus on the tech angles of education, science, and food production, including [The American Society of Agricultural and Biological Engineers](#)--this site includes information about innovations, careers, conferences, and more.

Cutting-edge tech from other sectors often dovetails with agriculture. These three links lead to some current "wow innovations": (1) [Scientists find inspiration in nature](#) as the field of biomimicry blurs the boundaries between living things and inanimate objects. (2) This global A.I. competition shows how the future of biochemical research will be [driven by machines and the people who oversee those machines](#). (3) Researchers nicknamed their 3D printer "The Replicator" in homage to the machines in the *Star Trek* saga that can materialize virtually any inanimate object. This [new version creates an entire object at once](#).

News and Views

Farm Bill Implementation: Agriculture Deputy Secretary Steve Censky said now that the USDA is back at full force, they are working "quickly and prudently" to [implement the new Farm Bill](#).

Farm Bill Money: The Congressional Budget Office projects that the new Farm Bill Act will mandate spending of [\\$428 billion dollars during the next five fiscal years](#)--where is it going?



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

Global Robot Competition Goes Underground

A University of [Nevada-Reno](#) [robotics team qualified to participate](#) in the SubT Integration eXercise (STIX) as part of the DARPA Subterranean Challenge activities.

Teacher Opportunity

Attending the National Agriscience Teacher Ambassador Academy is a commitment to [promote agriscience and inquiry-based learning](#).

Applications are accepted through February 15.



Meeting about Cattle

Kansas State will host [Cattlemen's Day 2019](#) on Friday,

March 1. The first topic will focus on "meat" from various sources.

CAST Social Media



Super Buzz about Bowl-game Ad: The [Super Bowl commercial that incensed the National Corn Growers Association](#) and others might demonstrate several things, including ignorance about nutrition and agriculture. The social media attention on an ad might also indicate that it was a rather boring game.

State of the Union and Ag: During his State of the Union speech, President Trump [mentioned food and agricultural policy a few times](#). Some in the agriculture community applauded his comments, and some thought he [missed an opportunity to discuss the farm economy](#).

Heating Up: New data from the U.S. government confirms that [last year was one of the warmest](#) ever recorded--nine of the ten warmest years on record have occurred since 2005.

News from the Far Side of the Barn

Grabbing a Quick Bite

(video): If you were a bear, this is [how you might get your take-out lunch](#).

Not Like Sponge Bob's

Pineapple Home: With so much trash in the ocean, some [sea creatures are living in cans and bottles](#).

Hungry, Hungry Caterpillar

(video): Looking like tiny sandworms from *Dune*, these [carnivorous caterpillars strike fear](#) in the hearts of fellow insects.



They may be beautiful, but as this video shows, [hummingbirds can also be vicious](#).

New CAST Publication

Issue paper focuses on the crucial topic of water use



Dr. John Tracy (Texas Water Resources Institute) will [present highlights of CAST's new issue paper on Feb. 25 and 26 at three venues](#) in Washington, D.C. This CAST report--*Aquifer Depletion and Potential Impacts on Long-term Irrigated Agricultural Productivity*--and its one-page Ag quickCAST will also be available as a free download from the CAST website.



Groundwater is the Earth's most extracted raw material, with almost 1,000 cubic kilometers per year (800 million acre-feet per year) of groundwater pumped from aquifers around the world. This issue paper reviews the causes and consequences of groundwater depletion, with a focus on impacts to agriculture as the largest sector of groundwater use. This understanding can aid in developing effective policies and practices for

groundwater development, use, and management. Before groundwater depletion can be addressed, however, a basic understanding of the principles of groundwater occurrence and behavior is necessary.

Friday Notes News Categories

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P. 1 New Year graphic from visitokc.com, Ag Day graphic from agday.org, digital farmer photo from cropscience.bayer.com, and hummingbird pic from lesliereagon.pinterest. P. 2 Tracy photo from twri.tamu.edu. Animal Sec. lamb pic from missourian.com and macaque pic from thescientist.com. Food Sec. Carver photo from peakradar.com and cow tongue pic from twitter.com. Plant Sec climate collage from nasa.gov and GMO symbol from gmoanswers.com. Inter. Sec. dam pic from time.com and water wading pic from bbc.com. Gen Sec. reef pic from greatbarrierreef.vacation.com. Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service.



Animal Agriculture and Environmental News

Chicken Whisperer (video): This [rooster became a part of the family](#), from meeting the daughter at the bus to helping her with her homework.

Sales Take Flight: Demand for fresh wings leading up to the Super Bowl provided a [boost for the chicken industry](#).

Farm Danger: A farmer in Nebraska was killed after he was [attacked by a bull](#) while attempting to check on his cattle.

Pig Research: A Purdue University researcher will work with experts from Kansas State and Iowa State on a project that is looking for ways to improve swine herd health. They hope to [increase animal well-being and pork producer profits](#).



What's it like being a [large animal veterinarian on brutally cold days](#)--when even the poop freezes?

Common Sense about Livestock Emissions: Frank Mitloehner, a UC-Davis professor, discusses [greenhouse gas emissions and animal agriculture](#).

Passionate about Animal Health: This pig farmer shows that a producer's [animals should have the best environment possible](#) to thrive in.



Animal Research Methods: Researchers [edited macaque embryos](#) to induce symptoms of sleep disorders and chose one animal to clone--at least one bioethicist questions the appropriateness of such science work.

Gene-edited Limbo: Some studies show that small genetic changes can make animal production [more environmentally friendly and improve animal health](#)--but no gene-edited animals are yet in grocery store foods.

Food Science and Safety News

Millennials, Obesity, and Cancer (video): According to this report, obesity is leading to increased [occurrences of cancer for millennials](#).

Heart, Health, and Weight: A new survey looks at Americans and their [understanding of blue health](#) and personal weight.

Let Them Eat Bacon (video): Several weeks back, we featured a bacon vending machine at The Ohio State University campus. Here is the [background regarding its inception](#).

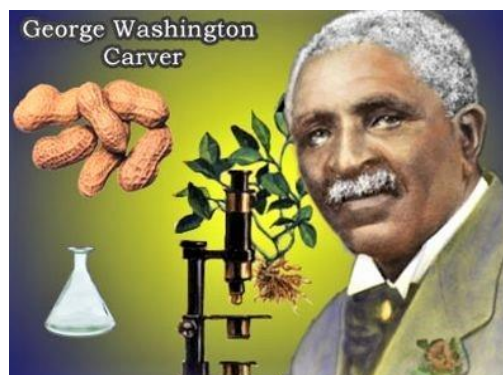
Biotech Food Gender Gap? Studies say that [women are more skeptical of genetically modified foods](#). In this interview, North Carolina State's Steve Greene discusses a research paper he coauthored about the issue.

Organic Prices: Organic [price premiums dip as demand grows](#), but most shoppers pay more for organic foods compared to their conventional counterparts.



Milky: U.S. House members and the USDA formulated rules to [allow both unflavored and flavored whole milk](#) in school cafeterias.

Cheesy: According to some studies, certain kinds of fatty dairy--including cheese--[are not bad for the heart](#).



This inspiring documentary explains the [brilliant career of George Washington Carver](#)--his science, his impact on food production, and his connections with universities such as Iowa State and Tuskegee.

Plant Agriculture and Environmental News

Bean Counting (video): The [soybean market is political, debatable, and important](#) to grain farmers. This Q&A session looks at some of the current factors affecting prices.

Forests and GMO Trees (video): Some say that [releasing genetically engineered trees](#) into forests to counter health threats represents a new frontier in biotechnology.

Seed Research: At Purdue University, an innovative seed grant program in its second year is [meeting its goal of encouraging collaboration among researchers](#).

Successful Wheat Yield: The [National Wheat Yield Contest overall winner](#) last year grew 203 bushels of wheat per acre.

More Corn? With trade talks and tariffs still in play, some row-crop farmers are [considering planting more corn](#).

Fact or Fad? Two University of Florida researchers are studying the [potential benefits of cannabidiol](#) (CBD).



GMO Answers Site: More than 200 experts have contributed to this site that includes a [wide scope of information about GMOs](#).



A new Cornell-led study shows that [Midwest agriculture is increasingly vulnerable to climate change](#) because of the region's reliance on growing rain-fed crops.

Big Data for the Environment: A University of Nevada-Reno expert issued a "call to action" to use big data to [ease problems about plant diversity and the environment](#).

International News

The Sweet Truth? (opinion): A coalition of more than 1,600 farmers proclaims that this [GMO chocolate is good for the planet](#).

Pig Disease in Japan (video): Outbreaks of [swine fever in Japan](#) have been confirmed at six pig farms and other facilities in five prefectures.

Poland's Shrinking Pig Population: In the mid-1990s, Poland had more than 22 million pigs within its borders, but now [the number has dwindled](#) to barely 11 million.

Dairy on the Mongolian Steppes: European bankers are loaning money to a [Mongolian dairy company to expand its business](#).



New video shows the [effects of a dam collapse in Brazil](#). Dozens are dead, hundreds are missing, and a mining company is blamed for the disaster.

No Swill: Officials want the country's pig owners to be aware that [feeding meat and meat products to pigs is illegal in Australia](#) because it could introduce devastating diseases.



A Tough Commute to School: A charity is trying to make it easier for a group of children in the Philippines who [wade through water and mangroves](#) to get to school.

A Dangerous Climb to School (video): Last year, we linked to this story about [Chinese children in a remote village who climb a steep, dangerous cliff](#) to get to school. Some reports indicate that a new stairway or rope system is in the works.

General Interest News

A Mighty Wind: Researchers say there is [little scientific evidence to support claims](#) that wind turbine "sounds and flickers" are hurting human health. Also, check out the blog post, [Tilting at Windmills in the Fields of Dreams](#).

Promoting Ag Trade: The USDA announced the winning bids for shares of \$200 million under the Agricultural Trade Promotion program, designed to [help farm and food groups market and sell products overseas](#).

Hitting the Marine Lottery: A Texas A&M professor and his graduate student participated in a research trip to the Caribbean, and they likely [discovered at least one new species of ocean](#)



Key West, Florida, voted to [ban the sale of sunscreens containing certain chemicals](#) linked to coral reef bleaching--some officials are challenging the ban.

[life](#).

An Aquanaut: A University of Florida distinguished professor of geology is one of the few geologists who work and [study volcanoes on mid-ocean ridges](#).



Honeybees and Insecticides: With support from the Almond Board of California, an expert from The Ohio State University produced [research about honeybees and insecticides](#).

Bees Doing Math? Research shows that honeybees harness both long-term rules and short-term working memory in order to [solve math problems and find a sugar-water reward](#).

Honeybee Research: Check out this CAST Commentary, [Why Does Bee Health Matter?](#)

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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- * National Pork Board
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