

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 CAST.

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Continent on Fire



Widespread bushfires in Australia have resulted in deaths, injuries, property damage, and environmental turmoil. [Millions of animals have been affected.](#) See the [International News](#) section below for more.

Membership Renewals

Our apologies to those who have had difficulties renewing their CAST 2020 individual membership through our website. We're working hard to make our online process easier and more efficient, and we offer some alternatives in the interim: You may complete and email this [interactive membership form](#) with your credit card information to Colleen Hamilton, Membership Specialist, at chamilton@cast-science.org; call our office at (515) 292-2125 to pay by phone with your card; or send a check to CAST, 4420 West Lincoln Way, Ames, IA 50014. Questions or concerns? Don't hesitate to contact Colleen. Thank you in advance for your patience in renewing your support during this transition!

BCCA Nominations

January 10, 2020

Ag, Tech, and a New Decade

Las Vegas Fair Highlights Innovation

The annual Consumer Electronics Show flashes new ideas and showcases cutting-edge innovation, but it also reminds us of the "21st Century Techno Vertigo" we experience as we get hit with waves of products that will "change our lives." Farm equipment, food production, and health techniques weave into the fabric of the event, but smartphones, robots, and entertainment products dominate the headlines. These links will give you a glimpse of the happenings:



Gadgets--from [gaming devices to a robot chef](#). **Transportation**--[concept cars, flying machines, and smart bikes](#). **Health**--[sensors, AI, and trackers](#) that are wearable, imbedded, or digestible. **Smart kitchens**--[talk to your refrigerator](#) and have robot arms on your counter tops. **Robots**--for [you and your pets](#). **Farming**--implements are back again with some [innovative devices](#) on display.

Reports from the CES techno blitz may excite, inspire, or possibly frustrate consumers. Costs, availability, and privacy concerns sometimes rain on the cyber parade. Many innovations are occurring "in the real world" at universities, test farms, and laboratories: (1) [Farmers are using drones](#) for many purposes, including grain and fruit production. (2) A [self-driving truck](#) drove across the United States to deliver butter. (3) Finnish scientists [produced a protein from soil bacteria](#) fed on hydrogen split from water by electricity. (4) A Penn State University report shows that [innovation is widespread in rural areas](#). (5) Many universities such as Kansas State are involved with ag/tech events--[Kansas Agricultural Technologies Conference](#) Jan. 16-17. (6) Three of the agricultural industry's best inventors--Sylvia Blankenship, Edward Sisler, and Frank Zybach--were inducted into the [2020 National Inventors Hall of Fame](#). Blankenship and Sisler worked with North Carolina State University.



More examples of ag innovations are spread throughout the *Friday Notes* newsletter, but it is worth noting that some folks get "tech weary" at times. [Forty-year-old tractors](#) are now a hot commodity in the Midwest.

News and Views

Biotech Regulations: As National Biotechnology Month unfolds, the USDA, the FDA, and the EPA launched a [Unified Website for](#)



[Submit your nomination](#) for the 2020 Borlaug CAST Communication Award by Feb. 3.

Ag Scholarships

This site provides information about [agriculture scholarships and websites](#)--from corporate to USDA to various other types.

FFAR Nominations

The Foundation for Food and Agriculture Research is accepting nominations for the [2020 New Innovator in Food and Agriculture Research Award](#).

Send in Ideas

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

CAST Social Media



[Biotechnology Regulation](#)--streamlining information about the three regulatory agencies.

USMCA: The U.S.-Mexico-Canada Agreement moved [closer to a final vote](#) in the Senate.

USJTA: The U.S.-Japan Trade Agreement began January 1, 2020. The USDA explains the expected [effects on tariffs and agriculture products](#).

Environment and Food: In this *Agri-Pulse* "Open Mic Interview," UC-Davis Professor Frank Mitloehner offers examples of how government incentives and research can [help farmers achieve sustainable climate goals and reduce greenhouse gases while maintaining food production](#).

News from the Far Side of the Barn

Want Fries with That? This link displays the "[top fast food news from 2019](#)"--including acts of kindness, technological advances, and strange occurrences.

Manure Happens (video): In case you need to move a wheelbarrow full of manure, this is [not the way to do it](#).

Car Stuffed with Tech (video): Sony does not plan to mass produce vehicles, but its [Vision-S electric car was a hit](#) at this year's Consumer Electronics Show.



Is it still fast food if you eat it slowly? [Related link](#) at upper left.

CAST Connections

A Glance Back as We Move into a New Decade

[During the past decade](#), CAST published numerous science-based publications focused on agricultural issues, launched two new awards (one for professionals and one for graduate students), and expanded digital/social media programs to spread credible science information.

Global Nature of CAST's Website

[CAST's website](#) received 93,679 visitors from 159 countries in 2019. Aside from the USA, most visitors came from Canada, India, China, the UK, and Australia. A few countries--Luxembourg, Curacao, and Gibraltar--only logged one visitor each last year, but CAST staff members are happy to provide credible information in any form to any audience.



A Foot Soldier in the Green Revolution

Kenneth Quinn held many important posts, and CAST was fortunate enough to work with him in his role as the [first president of the World Food Prize](#). In his blog, "Dreams Fulfilled," Quinn explains how he ended up as a "foot soldier in the Green Revolution."

BCCA Winners Make a Difference

[Borlaug CAST Communication Award recipients](#) include ten insightful, influential communicators. In this blog, 2018 BCCA winner [Jayson Lusk reviews his research](#) from the past year.



Growing List of Achievements

Elizabeth Burns-Thompson achieved a law degree, is the manager of corporate affairs for [Renewable Energy Group](#), and holds a position on the Altoona City Council. Before all this, the "girl from the farm" attended Iowa State University and worked as an intern for CAST as a student administration assistant and social media specialist.

Friday Notes News Categories

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P. 1 bushfire pic from [bbc.com](#), tractor pic from [pinterest.com](#), and fastfood pic from [etsy.com](#). P. 2 Burns-Thompson photo from [dmregister.com](#). Animal Sec. student photo from [tuskegee.edu](#) and goat pic from [firefightersclosecalls.net](#). Food Sec. graphic from [northwestern.edu](#) and milk graphic from [midwestdairyassoc.jpg](#). Plant Sec. student photo from [unr.edu](#) and soybean pic from [agdaily.com](#). Inter. Sec. solar pic from [DEWA.com](#) and tuna photo [youtube.com](#). Gen. Sec. robot pic from [ksu.edu](#) and plastics pic from [reuters.com](#). Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service or CAST.



Animal Agriculture and Environmental News

Livestock and Antibiotics (video): A recent [60 Minutes segment](#) focused on the use of antibiotics in the livestock industry. Pork producers and associations pointed out that the report did not mention [new regulations and the gains the industry has made](#).

Milky Issues (sites and videos): The National Milk Producers Federation [takes issue with recent headlines about the dairy industry](#), while this Wisconsin site laments the [loss of dairy farms in the state](#), and [Borden Dairy Company files for bankruptcy](#).

Hypocrisy on the Menu? The Golden Globes [ceremony went vegan](#), but not everyone was impressed, including [Dr. Frank Mitloehner](#) and the [Peterson Farm Brothers](#).

Seaweed for Cows: Coastal Maine has a lot of seaweed and a fair number of cows. A group of scientists and farmers think that pairing the two could help [unlock a way to cope with a warming world](#).

Poultry and Antimicrobial Use: The U.S. Poultry & Egg Association [released its report](#) quantifying the U.S. poultry industry's on-farm antimicrobial use.



Tuskegee University (and other schools) offer beginning students opportunities to gain first-hand knowledge from actual veterinary medicine instructors. The United States is facing challenges recruiting and retaining vet students, and CAST will soon release an issue paper focused on this topic.

Goats on the Fire Line: Some [California cities employ goats](#) because they clear fire-prone growth, eat invasive plants, and--let's face it--they have personality.



AquaBounty Salmon Coming Soon: Efforts to [market genetically engineered salmon](#) have gone through scientific, logistical, and political phases. This update explains how they are growing at an Indiana facility. **Note:** For insightful background information about this topic, access the CAST Commentary [The Science and Regulation of Food from Genetically Modified Animals](#).

Food Science and Safety News

Hittin' the Streets (video): The Food Ranger is one of the [most popular food vloggers in the world](#).

Biotech Food Rules: Federal rules for [disclosing biotech food ingredients](#) officially took effect, but some manufacturers

and retailers say they don't have enough information yet from the USDA on how to comply.

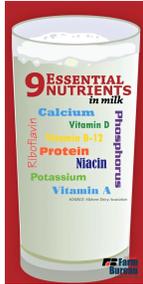
Intermittent Fasting: A recent study makes [a case for fasting for health reasons](#), but many still recommend caution.

Plant-based Protein: This interview--with a food specialist who owns a plant-based protein company--[focuses on plant-based foods](#).

Lab-produced Meat: In October, the University of Arkansas and CAST hosted a panel discussion on the "Future of Protein"--looking at the [legal, economic, and industry challenges](#) for cell-cultured meat. **Note:** Watch for a forthcoming CAST Commentary, *Producing Food Products from Cultured Animal Tissues*.



This study focuses on how task scheduling affects decision making--and how food [inspectors can keep our food safe](#).



The Year of the Cabbage? From cole slaw to kimchi, [cabbage is a veggie buzzword](#).

Milk Time: New research suggests that [children who drink whole milk](#) are less likely to be overweight or obese than children who consume reduced-fat milk.

A Weighty Process: As food consumed in the United States becomes more and more processed, [obesity may become more prevalent](#).

Organic Promotion: The Organic Trade Association will [showcase American organic products](#) at events throughout the world in 2020.

Plant Agriculture and Environmental News

Case, Cover, Repeat: Mississippi State University crop specialists examine the [use of cover crops](#).

Trees, Gas, and Genetics: Scientists are working on genetically modified poplar trees that will [emit fewer greenhouse gases](#).

A Season of Extremes: Flooding, field work delays, and disease [plagued commodity growers](#) across the Corn Belt in 2019.

Digging Up the Dirt: From the Midwest to Myanmar, farmers are trying to figure out [how to make their soil healthier](#) and more productive.

Plant Collaboration: Earlier this year, a groundbreaking symposium brought together [horticulturists and agricultural researchers](#) of all stripes--with shared goals of conservation and plant breeding research.



Scientists from the University of Nevada-Reno and other schools are [studying nitrogen pollution in dryland watersheds](#) to shed light on the effects of pollution on such terrain worldwide.



Soybean Power: A new [soy-based motor oil is now available](#) for passenger vehicles.

Borrowing from Prairie Wisdom: A cereal and beers are now being made with a new [variety of perennial grain](#) known as Kernza.

International News

Bushfires (video): Australia has been ravaged by heat, drought, and fire. Along with the human tragedy, unfolding stories include (1) [economic impacts](#), (2) [livestock losses](#), (3) [impacts on dairy](#), (4) [veterinarians' efforts to help](#), and (5) [climate effects](#).

Food Innovation: South Korea's institutional [food-service sector is searching for new products and suppliers](#), creating opportunities for U.S. beef and pork.

Brazil Biofuel: Brazil is producing [record high amounts of ethanol](#), yet available stocks might not be enough to meet certain demands.

Garlic, Gas, and Happy Cows: A Swiss company claims its [garlic supplement could cut methane emissions](#) from cows, increase milk yield, and reduce bovine stress.

Breadfruit on the Menu? This food specialist says [breadfruit is climate adaptable and resilient](#)--and he hopes the plant can increase food security in the Caribbean.



Sky-high Sushi (video): A Japanese sushi magnate [spent \\$1.8 million on a huge tuna fish](#) at a New Year's auction in Tokyo. The restaurant chain owner spent even more at last year's auction.

Ethanol in China: A biofuels official [comments about a report](#) that China has suspended the rollout of its E10 ethanol mandate.



As reported last year, Dubai is creating the [largest single-site solar park in the world](#)--set for completion in 2020. It will use mirrors called heliostats to focus sunlight at the top of a tower.

General Interest News

A Decade of Twisters (videos): The past decade featured memorable and destructive tornadoes, with 2011 recording the most extreme outbreak on record. [Check out these amazing photos and videos.](#)

Coyote Incidents (video): Authorities in Chicago are responding to [reports of two coyote attacks](#), one involving a 6-year-old boy.

Where the Wild Things Are: This CAST blog looks at several "close encounters" between [animals and humans](#).

In the News: With more than 5,000 news items to pick from, *AgriMarketing* selected its [ten most read items of 2019](#). Topics included weather, trade, and even a dispute between corn producers and a beer company.

Multitasking: This Mississippi State University agricultural economist juggles many [projects that benefit wildlife and the environment](#) in inland ponds.

Aiding "Food Deserts": The Missouri Department of Agriculture is [giving grants to projects](#) in "food deserts" around the state.



"Just One Word--Plastics": Microscopic pieces of plastic have been found everywhere from the Arctic to ocean depths. This article [contends we are ingesting microplastic bits](#) in many ways.

It's a Wrap? Perdue Farms will start [packaging some of its meat products in compostable foam](#) made of cornstarch that disintegrates under running water.



Kansas State University experts are working with small machines guided by [computer programs that will transform farming](#).

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.

CAST provides Friday Notes as a benefit to its members. Please do not forward, edit, copy, or distribute the Notes in any form to nonmembers without the express permission of the CAST Executive Vice President Kent Schescke (kschescke@cast-science.org). Instead, please encourage your colleagues to join CAST and thereby become eligible

for all membership benefits. Contact Melissa Sly at 515-292-2125, ext. 232 or msly@cast-science.org, or [CLICK HERE](#) for CAST membership information.



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- * Agricultural & Applied Economics Association
- * 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
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- * Bayer
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- * 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
- * U.S. Poultry and Egg Association
- * 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.

Members of CAST's Education Program

- * Cal Poly-San Luis Obispo
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