



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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Announcements



May your winter break be illuminated with a beautiful glow. The next edition of Friday Notes will be on January 8, 2021.

Support CAST and its mission by [renewing your membership](#) or [joining CAST](#). Check here for a look at [this year's activities](#).

A new program—Crops TV—is aimed at delivering [crop production information directly to farmers and agribusinesses](#).

Managed by Iowa State University, it provides live, interactive, and recorded “on-demand” segments.

A report from the USDA-NIFA and Purdue University suggests strong job demand for new [college graduates with degrees in agriculture programs](#).

The 2021 virtual [Driftless Region Beef Conference](#) will feature Dr. Frank Mitloehner, with a focus on livestock, greenhouse gases, and climate change.

A January 12, 2021, [American](#)

December 18, 2020

A Challenging Year Produced Many Quality Results

As the sun sets on 2020, many will remember the hardships such as a global pandemic and food insecurity. But sections of society have stepped forward, including those in the medical, scientific, and food production realms. End-of-year lists will appear, and science and agriculture will



rightfully be recognized. *Ag Daily* has its ["top agriculture stories"](#), *Science Daily* offers a website of ["top science headlines"](#), while *Science News* lists its ["science stories that spark wonder"](#). *Nature.com* presents ["best science images"](#), and the *Smithsonian Magazine* has its ["top conservation stories"](#). The [World Food Prize 2020 Borlaug Dialogue](#) produced eleven insightful videos about building resilient food systems. And the key stories this year no doubt include the making of [COVID-19 vaccines](#) and the [Nobel Prize for the development of CRISPR](#).

When the sun goes down on December 31, recognition will shine on those who stood at the front lines—from scientists to medical workers, from caretakers to volunteers at food banks, to farmers, ranchers, laborers, truckers, grocers, and all those who kept the food chain going. A lasting glow from 2020 might just come from the people who helped others in a challenging year.

News and Views

Ag and the Environment: Climate change appears to be [a key priority](#) for the incoming administration. This editorial explains why many think science—especially [genome editing](#)—could play a role in climate change policies.

USDA Chief Economist: After serving at the University of Missouri's Food and Agricultural Policy Research Institute, [Seth Meyer will return to the USDA to assume the position of chief economist](#). He is replacing Chief Economist, Robert Johansson.

USDA News: The USDA (1) signed a memorandum of understanding with NASA to strengthen their partnership on [space-based assets benefitting life on Earth](#), (2) posted its latest

[Society of Agronomy and Soil Science Society of America webinar](#) will focus on sulfur nutrition in major crops.

CAST College Corner

The [University of Kentucky](#) provides these links for internships and student positions related to agriculture, food, and the environment.

The [University of Arkansas](#) received a grant to investigate molecular signals that initiate plant defenses against nematodes and soil diseases.

[North Carolina Agricultural and Technical State University](#) received a donation to enhance student success and support outstanding academic programs.

Check throughout *Friday Notes* to see more featured articles from member universities.

CAST Social Media

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

[radio newsline links](#), and (3) announced key achievements this year for the [Food Safety and Inspection Service](#).

United against the Virus: The research and testing programs at UC-Davis are good examples of how [universities and communities can work together](#) to fight COVID-19.

Food Insecurity: The pandemic is driving [increases in food insecurity](#), and as many as 50 million Americans need aid.

Rural Health: The pandemic may accelerate the [closures of rural hospitals](#) that already began the year on the brink.

News from the Far Side of the Barn

Glow-in-the-Dark Animals (video): This site looks at the [science behind the Toledo Zoo's illuminating discovery](#) that the Tasmanian devil is "biofluorescent"—joining several other Aussie animals that "glow."



Living on the Edge (video): These experienced kayakers take an [amazing plunge over raging falls](#) in New South Wales.

No Malarkey--the Word of the Year Is... "Pandemic" gets word of the year in this [Merriam-Webster article](#), but a "[funniest list](#)" includes words like "puggle" and "nothingburger."

CAST Updates

2020 Publications

It has been a productive year for CAST publications. This list includes the publications released in the last half of the year, including a past publication translated to Spanish.

- August: [Agriculture and the Microbiome](#)
- September: [Impacto del Principio Precautorio en la Alimentación de las Generaciones Actuales y Futuras](#) (*Impact of the Precautionary Principle on Feeding Current and Future Generations*)
- September: [The Importance of Communicating Empirically Based Science for Society](#)
- October: [Food Biofortification—Reaping the Benefits of Science to Overcome Hidden Hunger](#)
- November: [Ground and Aerial Robots for Agricultural Production: Opportunities and Challenges](#)

Summary of Activities

The CAST Summary of Activities for September through December is [now available for viewing](#). It highlights the 2020 BCCA presentation, the annual board meeting, the 2021-2025 adaptive plan, recent publications and



webinars, and 2021 publications under development.

Guest Blog--For Want of a Nail

This [guest blog](#) was written by Bernalyn McGaughey, President and CEO of [Compliance Services International](#), a CAST sustaining member.

Animal Agriculture and Environmental News

Will Butterflies Continue to Flutter By? (video): Monarch butterflies were denied endangered species listing although there are [signs that their numbers are shrinking](#).

Pig Respiratory Health: Advances in diagnostic testing and research are shedding new light on the microbial pathogens involved in [porcine respiratory disease](#).

PPA and Water Treatment: Researchers investigated the [effect of peracetic acid solutions in poultry processing](#) wastewater treatment systems.

Disease Prevention: The Beef Checkoff-funded Beef Quality Assurance program developed a "[Daily Biosecurity Plan for Disease Prevention](#)" template.

Piglet Survival: This research focuses on the [concept of fetal imprinting](#) in commercial sow farms.

Poultry News: This edition of *Poultry World* has story links about [poultry production topics](#) from around the globe.

Home on the Range: As this livestock expert points out, [ranching has many benefits](#) beyond beef production.



The USDA approved a first-of-its-kind [intentional genomic alteration in a line of domestic pigs](#) that may be used for food or human therapeutics.

Some dairies use beef semen to produce more [marketable calves that are 50% beef and 50% dairy](#).

This article [looks at cloning](#) and other assisted breeding technologies for cows.

Food Science and Safety News

Tracking Foodborne Illness (video): This interview looks into foodborne illness outbreak investigations that could be conducted more effectively when supply chain partners provide [extended product information during "tracebacks"](#)

Future Food: Led by UC-Davis scientists and funded by the USDA, researchers from 40 organizations will use artificial intelligence to [create the next-generation food system](#).

Cannibal Sandwich—Salmonella on the Menu? Wisconsin [health officials warned residents](#) against eating a traditional raw meat sandwich during the holidays.

Carrot Power: Carrots are [good sources of beta-carotene](#), but an active enzyme is needed to get the full benefits.

Blueberry Blues: Some American blueberry growers are dealing with [contentious trade issues](#).



He might look a bit stern, but Alton Brown is happy to give insights

Hard on the Heart: This study says a greater obesity duration is associated with worse values for all [cardiometabolic disease factors](#).

about his [definitive method for cooking a holiday roast](#).

Plant Agriculture and Environmental News

Creating More Life (video): According to this Mississippi State University expert, [propagating plants is a cost-effective way](#) to add beautiful plants to your garden.

Protecting Wild Relatives: A new study looks at the plight of America's "crop wild relatives" and how they are [overlooked in the era of human-driven biodiversity loss](#).

Sensational Sara: A new tomato variety has been released and it has a perfect [balance of sugar to acid ratio](#).

Protecting Water: The University of Florida's "[Water Wednesdays](#)" in December will focus on urban agriculture.

Almond Science: A Soil Science Society of America expert studies how [almond trees use the key nutrient nitrogen](#).

Beans, Water, and Food Security: A Crop Science Society of America scientist studies native crops that can [enhance food security while reducing water use](#)—with a focus on the tepary bean.



Besides fueling vehicles, [ethanol plays a role](#) in food preservation, beverage bottling, and the COVID-19 vaccine rollout.

International News

From Sleep and Exercise to Water Quality (video): The International Space Station has had continuous human presence for 20 years—with [scientific research that benefits space technology and life on Earth](#).

Space Fertilizer (related to above): With space travel and closed areas in mind, scientists shed light on a cheap and efficient [method to make liquid fertilizer \(ammonia\)](#) from simplified artificial urine to grow food and treat waste.

Gene-edited Potatoes: Using new molecular techniques, researchers developed a [potato that is resistant to blight](#).

New Tomatoes: Food made with genome editing will be on Japan's dinner tables for the first time with the government's [approval of a new heart-healthy tomato](#).

Mexican Produce: Shipments of [Mexican produce to the United States](#) increased at a double-digit rate in the second quarter this year.

Flourishing Grapes, Struggling Workers: Many vineyards in Namibia are well watered, but the [farmworkers caring for the grapes struggle](#) to get enough clean water.



After bushfires on Australia's Kangaroo Island last summer, wildlife [experts feared the pygmy possum population had been wiped out](#). But a new discovery has given them hope.

General Interest News

Ag Innovation Challenge (video): The Farm Bureau Federation selected [ten startup companies](#) to compete in their challenge—with issues ranging from rural broadband to COVID responses on the farm to a rock-clearing machine.

Does Rudolf Wear a Mask? (video): This Vermont [reindeer farm is adjusting to pandemic conditions](#) by inviting children and families to come visit the animals.

Equality and Justice: A Cal Poly student set up a new program that works with faculty to open up [discussions on racial inequities and injustice](#) within their class topics.

"Smart, Automated" Tractor: This tractor offers a electrification, automation, machine learning, and data analysis to bring a [driver-optional, smart tractor to the farm](#)—with connections to UC-Davis experts and other resources.

Extension Providers: This publication from experts at the University of Georgia and the University of Florida identifies the [capacities an extension network might need](#) to support professional services.



Lucky, a 19-month-old German shepherd, is the [first dog trained to find the eggs of the colorful lanternfly](#), an insect that damages 70 plant species and is costly for agriculture.

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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
- * 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
- * Cal Poly State University
- * Corteva Agriscience
- * CropLife America
- * Crop Science Society of America
- * Entomological Society of America
- * Innovation Center for U.S. Dairy
- * 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
- * United Soybean Board
- * University of Nevada-Reno
- * U.S. Poultry and Egg Association
- * Weed Science Society of America
- * Western Society of Weed Science

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The Science Source for Food,
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