

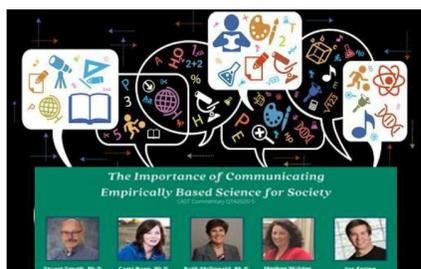


Friday Notes is designed to enhance communication among various agricultural sectors, educators, students, and the public who are interested in a variety of plant, animal, food, and environmental issues. Friday Notes advocates the pursuit of credible, unbiased, science-based information. Material contained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

In This Issue....

- [Animal Agriculture News](#)
- [Food Science & Safety News](#)
- [Plant & Environmental News](#)
- [International News](#)
- [General Interest News](#)

Events and Announcements



CAST will release *The Importance of Communicating Empirically Based Science for Society* on September 21 with a [webinar the following day](#).

The [#BlackinChem campaign](#) on Twitter helped Black chemists celebrate their research and participate in discipline-themed discussions ranging from favorite analytical techniques to favorite transition metals.

The [2020 Agri-Pulse Ag & Food Policy Summit](#)--a virtual event on September 21--features several noteworthy speakers.

As part of the World Food Prize week, the [Iowa Hunger Summit](#) will convene an array of representatives from various sectors to discuss hunger and food insecurity—October 19-21.

CAST College Corner

September 11, 2020

Weather Extremes Are Becoming the 2020 Norm

This summer has featured [devastating fires](#), a record-breaking cold snap, crop-destroying derecho winds, a widespread drought, and an overactive hurricane season.

Multiple [fast-moving wildfires](#) continued burning [across California, Oregon, Washington](#), and other states, threatening people and homes in their paths. Some [farmers have battled](#) on their own as the number of fires are too much for state crews.

The [coldest early September air mass on record](#) in the Rockies followed a heatwave as temperatures [dropped by 60 degrees](#) or more in less than 24 hours.

A rare and powerful derecho and its 100+ mph winds [destroyed much of the corn crop](#) in parts of the Midwest.

A new United Nations report says the world is getting [close to the temperature limit](#) set by global leaders, and many think [worse climate fluctuations](#) are yet to come.



News and Views

USDA News: The USDA is calling for (1) nominations of qualified candidates for a two-year term on the [Task Force on Agricultural Air Quality Research](#), (2) innovative technologies that can be readily deployed across U.S. agriculture for its [Agriculture Innovation Agenda](#), and (3) applications from those needing [assistance due to Hurricane Laura](#).

Farm Income: The USDA estimates that farm income in 2020 will be the [highest in seven years](#), not counting an additional \$14 billion in federal payments on the horizon. Federal payments will be about 36% of net farm income this year.

Rural Challenges: New [COVID-19 cases in rural America](#) have

A [Tuskegee University](#) graduate is making a difference in this time of COVID-19 by co-authoring a blog to discuss food security during the pandemic.

The [University of Arkansas](#) will present the latest research during an online soybean field day September 17.

[UC-Davis](#) researchers--including Frank Mitloehner, [2019 BCCA](#) winner--are rethinking methane and showing that climate neutrality is within reach for the California dairy sector.

Check throughout [Friday Notes](#) to see more featured articles from member universities.

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

continued to increase while metropolitan cases have declined. Also, according to many, recent [Postal Service delays](#) have been particularly widespread and difficult in rural communities.

Ag, Science, and Economics: Links in the recent AAEA newsletter include [insightful articles from experts](#) at the University of Missouri, The Ohio State University, the University of Georgia, and more.

News from the Far Side of the Barn

No Fair--But Fair Food (video): Most state fairs were canceled, but [food vendors and their fans are going to great lengths](#)--from drive-throughs to phone apps--to keep the corn dogs, deep-fried Oreos, and chickens-on-a-stick flowing.



Beetle Battle (video): In a brief insect sumo match, a stag beetle comes back to [defeat the much bigger robotic stag beetle](#).

Krispie or Crispy, This Farmer Keeps It Crunchy (video): Take a serious look at the frivolity of [growing rice crispy treats](#).

CAST Updates

Science, Agriculture, and Communication

During a side event on October 13 at the [2020 World Food Prize](#), CAST will host a virtual event to honor this year's Borlaug CAST Communication Award winner, Dr. Alexa Lamm. Watch for details about speakers, participants, and ways to sign up in forthcoming CAST announcements.

The [Borlaug CAST Communication Award](#) has become a respected conduit for important information that comes from some of the premier scientists in the world of agriculture. For the past decade, CAST has recognized outstanding achievement by a scientist, engineer, technologist, or other professional working in the agricultural, environmental, or food sectors for contributing to the advancement of science in the public policy arena. [All eleven winners have demonstrated their abilities to communicate](#) by written material; public presentations; and/or the use of television, radio, or other social media.



The Importance of Communicating Empirically Based Science for Society

This Commentary will be available for download on September 21. There will be a free webinar on September 22--you can [register here](#).

This paper discusses the crucial factors of what we define as empirically based science (rigorous, proven methodologies, and peer reviewed results), emphasizing that whether science is conducted by a private company, a university, or a government department or agency, it is all the same, requiring that sound methodologies be followed. Scientific research protocols and methodologies have been developed, reviewed, and refined through the application of each scientific method and the peer review of experimental protocols and results, creating global standards on research methods. Empirical science is empirical science--it is not an ice cream flavor; one cannot pick and choose which aspect of the scientific method to support and which to reject. The application of empirical science is consistent, whether applied to climate change, vaccines, or GM crops

and foods.

Summary of Activities Update

CAST's Summary of Activities from May-August 2020 is now available for viewing. It was a very busy four months--with the 2020 BCCA winner and new President-Elect announced. Additionally, there was a new publication released every month. The updates also include upcoming CAST events, and the full report [can be found here](#).

Agriculture and the Microbiome Update

It has been two weeks since the rollout of the CAST Issue Paper: *Agriculture and the Microbiome*. Here are some stats:

Total views on press release – 3,671
Total pickup – 103 (media outlets that posted the press release)
Press Release on CAST Website – 50 views
Views on the YouTube video – 146

Upcoming Publications

- *The Importance of Communicating Empirically Based Science for Society*--See above for info.
- *Food Biofortification--Reaping the Benefits of Science to Overcome Hidden Hunger*(October release)
- *Ground and Aerial Robots for Agricultural Production: Opportunities and Challenges*(November release)

Animal Agriculture and Environmental News

Genetics and Livestock (video): Alison Van Eenennaam (UC-Davis and [2014 BCCA](#)) appears in this [documentary about CRISPR gene-editing technology](#), and she coauthored a study about the development of electroporation conditions that allow the [delivery of a CRISPR/Cas9 system to bovine zygotes](#) for efficient gene knock-out.

Poultry Research Summaries: Every month, the Poultry Society of America creates an [interpretive summary of important studies](#) related to the industry.

Carbon and Pork: This pork-producing company aims to be the first carbon-negative meatpacker in the United States with the [goal of removing more carbon emissions](#) from the atmosphere than it produces by 2030.

Destination Pork: The U.S. Pork Center has [developed a curriculum](#) to interest high school students in pork industry jobs and career opportunities.

Cattle Herd Security: This beef specialist wants producers to [develop and implement a biosecurity plan](#) for their herd—with a focus on foot and mouth disease.

Tryptophan in Trout: Adding 5 mg of tryptophan in trout diets showed [higher stress resistance levels](#).



The first successfully [cloned endangered Przewalski's horse](#) was born August 6 in a veterinary facility in Texas. It was cloned from the DNA of a male Przewalski's horse that was cryopreserved by the zoo in 1980.

North Carolina State researchers say [coproduction of bioenergy and organic fertilizer from swine waste](#) retains nutrients derived from the hog manure.

Food Science and Safety News

A Rare Steak Indeed: This chef tracks down an [elusive slab of the rarest steak](#)—and it appears to be well worth it.

MoreMealsLessWaste: As an example of the many states

working on food security, the New Jersey Department of Agriculture is [partnering with four food banks to help prevent food waste](#).

Less Is More? Cutting calories significantly may not be an easy task for most, but it's tied to a [host of health benefits](#), according to this study.

Sugar in the Gut: This research looks at the [consumption of fructose, liver disease, and how sugar disrupts](#) the epithelial barrier protecting internal organs from bacterial toxins in the gut.

Eating Disorders in a Pandemic Era: According to this report, [eating disorders are thriving](#) during the pandemic.



Several apps promise to rustle up a recipe based on whatever food you have lying around--[using artificial intelligence](#).

Plant Agriculture and Environmental News

Nitrogen "Fixers"? This corn variety grows aerial roots producing a sweet mucus that feeds bacteria. Some think it could lead to a breakthrough to help crops like corn and wheat [produce their own nitrogen](#).

Dealing with Crop Damage: USDA specialists [advise farmers with crop damage](#) from the August derecho to leave their cropland soils undisturbed this fall and then plant cover crops.

The Community of Trees: This Canadian professor specializes in *corrhizae*--the [symbiotic union of fungi and roots](#) that helps plants absorb nutrients from soil. She says this helps trees connect as a community.

Bovine Hemp? A pair of studies at Kansas State University is bringing new insight to farmers and producers seeking to [incorporate industrial hemp in cattle feed](#).

Apple Time: This fall, apple lovers can look forward to three new [varieties from the oldest apple breeding program](#) in the United States--located at Cornell University.

Cotton News: This Mississippi State University specialist looks at [cotton markets, crop expectations, and pest problems](#).



Apparently, [some Americans planted the mystery seeds](#) that arrived in the mail, but so far no reports of a *Little Shop of Horrors* carnivorous sprout yet. Amazon [recently banned foreign sales of seeds in the United States](#), and authorities warned gardeners against planting the seeds that might just be a social media publicity scam.

International News

Crowds, Food, and the Pandemic (video): China's first Costco store opened last year, and the company has learned how to handle the rush and the [shopping tactics necessitated by the pandemic](#).

Regenerative Ag: In a recent seminar, a Canadian farmer explained [regenerative agriculture principles](#). As he says, "Modern agriculture grows plants from the soil; regenerative agriculture grows soil from the plants."

Country's Lucky Fish: Zambia's president led citizens and students in [mourning the death of a fish](#) that lived in a pond at the country's second-biggest university.

Some Not Ready for a Change: Australian research indicates that despite having a concern for the environment and animal welfare, 72% of Generation Z respondents were [not ready to accept cultured meat](#).

Germany and Agriculture: Germany's [Commission on the Future of Agriculture](#) will form recommendations for an efficient agriculture industry model.

Swine Fever Reported: Germany confirmed its [first case of African swine fever](#), after a wild boar tested positive.



Record summer heat has some Japanese wearing [jackets fitted with battery-powered fans](#) that circulate air over their bodies.

General Interest News

Donating Tech, Time, and Concern (video): These two women are [helping families get back to school](#) by making sure donated laptops are working and in the right hands.

Young Farmer: This 22-year-old is finishing study at the University of Nebraska-Lincoln, and [he has stepped into the world of farm ownership](#), not just as a first-generation Black farmer, but a first-generation American as well.

How Does Your Garden Grow? This North Carolina State report explains how community gardens can give people who don't have much land the [chance to grow food while connecting with others](#).

Importance of Biodiversity: According to a new report, [animal populations have declined](#) by a staggering amount.

Shrink Smart: An Iowa State University research project will look at [how shrinking small towns maintain quality of life](#)—with an eye on social infrastructure and other factors.

Antibiotics in Water: Faculty at the University of Nebraska discovered [human antibiotics](#) in two watersheds.



Genetically enhanced "mighty mice"—part of a health experiment on the International Space Station—show that blocking a molecular signaling pathway can [protect against muscle and bone density loss in the absence of gravity](#).

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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
- * 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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