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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.

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.

CAST Social Media

Visit our website

CAST welcomes ideas for future publications and projects.

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.
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.

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**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.

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**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.

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* 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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* 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

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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