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Ag Innovation Unfolding in Many Forms--P. 2
Animal Agriculture News
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Infinity Mirrors

Washington, D.C., is the first stop for an immensely popular art exhibit that seems to go on forever.

Funding Drives Research
Check here for the Quantitative and Qualitative Review of NIFA Capacity Funding. As it states, "Research is the fundamental engine that drives U.S. innovation, economic progress, and competitiveness.”

University Research Support
Several prominent research universities have joined an effort to ask for stronger federal support of the agricultural and food sciences--including Cornell, Kansas State, Iowa State, Nebraska, North Carolina State, Ohio State, UC-Davis, and Texas A&M.

March 31, 2017

Ag Innovation Series Rolls On

Another CAST publication available April 5

CAST’s ambitious Ag Innovation Series looks at specific programs, policies, and technologies that will advance global food security.

During three sessions on March 22, experts presented valuable information about Plant Breeding and Genetics. The full paper, Ag quickCAST, and video of the presentation are available here.

On April 5, policymakers and the public will be able to access the next publication in the series--Crop Protection Contributions toward Agricultural Productivity. Check here for information about how to attend one of the three rollout sessions on April 5 and 6 in Washington, D.C.

Scroll down to page two for more about these publications.

News and Views

Before looking at the Capitol Hill buzz, it's worth remembering that news happens globally, and a dire situation is worsening in South Sudan--as this video shows, air drops help, but thousands are in danger of starvation.

But it has been a fast and furious news week in Washington, D.C.--again. Sonny Perdue was cleared for the role of USDA Secretary by the Senate Ag Committee--stay tuned. One theme that emerged from the many national issues pertains to the government and the environment. These are just a few of the relevant articles:

**EPA and Chemicals:** The EPA decided to continue allowing the use of the insecticide chlorpyrifos, stating that the science surrounding human
Youth Ag Award
The National 4-H Council announced that Samuel Sugarman of California was selected as winner of the 2017 4-H Youth In Action Award for Agriculture. He created a farm tour program to connect youth with agriculture. More 4-H Legacy Award winners are listed here.

Share Your Brain Spurts
Do you have an idea for a CAST publication, video, or project? CAST welcomes suggestions, ideas, and recommendations. You may also send "FridayNotesWorthy" information to dgogerty@cast-science.org.

World Food Prize Nominations
Nominations are open until May 1 for the prestigious World Food Prize. It is awarded "for a specific, exceptionally significant, individual achievement at any point along the full range of the food production and distribution chain."

Funds for Student Study
Cornell University has been awarded funds from the USDA to facilitate fellowships for students studying agriculture.

CAST Social Media
Click here for links to CAST sites: Twitter, Facebook, Pinterest, LinkedIn, videos, and blogs.

Food Security Grows from Many Sources
CAST research ties in with the wave of ideas promoting food production

The current green revolution is tinted with shades of digital, genetic, robotic, and conventional colors--it is a food production movement that pulls from many sources. Cast's Ag Innovation Series is in the process of highlighting many of the most important trends. In the links below and elsewhere in Friday Notes, we will continue to examine the efforts under way to ensure that global food security becomes a reality.

**CAST is releasing an issue paper titled Crop Protection Contributions toward Agricultural Productivity--A paper in the series on The Need for Agricultural Innovation to Sustainably Feed the World by 2050. Dr. Susan Ratcliffe--task force chair of the project and director of the North Central IPM Center at the University of Illinois--will present the publication at three events in Washington, D.C., on April 5 and 6.

**EPA and Regulations: The House voted to prohibit the EPA from writing any regulation that uses science that is not publicly available--the bill is called the HONEST Act.

**EPA and Clean Air: An executive order on energy independence instructs the EPA to review the Clean Power Plan, an Obama administration initiative intended to deal with climate change. This story includes comments from EPA administrator Scott Pruitt. And this companion article includes reactions from others.

**Pipeline Update: The Trump administration announced that it would issue a permit for construction of the long-disputed Keystone XL pipeline. As this editorial points out, not all agree with the idea.

**The Government and the Environment: This look at the federal government's action to protect the environment is "one person's guide to the laws that keep the air clean and the water pure." Others might have a different perspective on this issue.

News from the Far Side of the Barn

Fasten Your Seat Belt for This Tour (video): What a way to tour a city. This daredevil uses a wingsuit to get a bird's-eye view of the skyscrapers.

Ubiquitous, Voracious, and Kind of Cute: Some think spiders are cool, but the information and short videos on this site will confirm an arachnophobe's worst fears.

Cucumba Man Knows His Nutrition (video): This Jamaican rapper lays down bars about all things veggie--and more.

Spiders have managed "websites" for thousands of years.
**In an initiative called FarmView, researchers combine sensors, robotics, and artificial intelligence to create a fleet of mobile field robots they hope will improve plant breeding and crop-management practices.**

**In this article, Dr. Kevin Folta (University of Florida) explains some of the breakthroughs in genetic technology that are eventually going to lead to improvements in fruit and vegetable crops.**

**This team of agricultural experts, computer scientists, engineers, and geographic information specialists has turned to unmanned aerial vehicles to facilitate crop production.**

**Hank Campbell (American Council on Science and Health) explains how Norman Borlaug saw the necessity of pro-science advocacy decades ago, and he sites CAST in its efforts to promote credible research—including its recent publication, Plant Breeding and Genetics. The Ag quickCAST version of the paper is available here.**

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**Friday Notes News Categories**

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P. 1 pic of pink art from washingtoncitypaper.com, and spider pic from assets.rbl.ms. P. 2 pic of presenters from Tom Van Arsdall. Animal Sec. pig pic from pbstwimg.com. Food Sec. robot pic from consumerist.com. Inter. Sec. drone pic from theconversation.com. Gen. Sec. windmill pic from mainlesson.com and g.a.harper. Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service.

**Animal Agriculture and Environmental News**

A "Shocking" Way to Save Pigs (video): Nearly 10% of commercially raised piglets die before being weaned—most due to crushing. This Iowa State student invented life-saving wearable technology to help.

Effects of Nationwide Bans: This livestock expert says bans imposed by some countries on poultry products can affect supplies and prices, even when the disease in question does not pose a risk to the food supply.

Livestock Genetics: This site provides access to Alison Van Eenennaam's paper, Gene Editing: Breeding or GMO? Other important papers and presentations are also available here. Note: Dr. Van Eenennaam received the 2014 Borlaug CAST Communication Award.

Livestock and Antibiotic Use (opinion): According to this GAO report, it is difficult to know whether or not farmers are cutting back on antibiotic use.

Pushing for a Beef Deal: U.S. meat organizations urge President Donald Trump to secure China President Xi Jinping's support for a beef deal, with industry talks failing to make progress.
**Farmed versus Wild:** This study looks at contaminants and fatty acid levels in farmed versus wild Atlantic salmon. Note: Click here to access a CAST paper that refers to biotech salmon: *The Science and Regulation of Food from Genetically Engineered Animals.*

**More Than the Usual Grazing on the Grass:** At this time, the FDA prohibits the use of hemp in animal feed, but Colorado livestock could be eating it as early as next year if a bill gets adopted.

**Learning the Trade:** At Kansas State's Purebred Beef Teaching Unit, the breeding program provides an educational, hands-on experience in cattle production that helps students find their role in the industry.

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**Food Science and Safety News**

**R2D2 Meets Roomba (video):** This food delivery robot rolls slowly but proficiently over obstacles as it completes its task.

**Edible App (video):** Two university students teamed up to make it easier for people to dine out. Their Edible Project app allows users to search for food based on specific dietary needs—dairy, vegan, gluten, and more.

**Menu Labels:** It appears that Obamacare will stand long enough to bring menu labeling into reality on May 5—the FDA regulation means that restaurants with 20 or more locations must post in-store menu boards for every food item served.

**Weight and Happiness:** A review of mood-food studies shows that the relationship between diet and depression is independent of body weight. Small changes matter, whether the scales move or not.

**Good Food--But at a Risk?** A recent North Carolina State Univ. study finds that bestselling cookbooks offer readers little useful advice about reducing food-safety risks.

**Heart Health and Cholesterol:** While many still point out the benefits, increasing levels of 'good' HDL-cholesterol does not necessarily provide protection against heart disease, according to this new study.

**Let's Hear It for the Common Spud (opinion):** Potatoes have had a bad rap, mainly due to starch. But this article says they have plenty of good points.

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**Plant Agriculture and Environmental News**

**Even Popeye Would Be Impressed (video):** These scientists apparently grew beating human heart cells on spinach leaves, and they hope the plants could be used to grow layers of healthy heart muscle.

**Soil as a "Happy Drug":** Apparently, science proves that working with the land makes for happier people. This expert says soil microbes might be like drugs without side effects, as they provide positive vibes.

**Using Chemicals Properly:** Missouri lawmakers have given final approval to a bill increasing a fine for illegally using herbicides that damage other farmers' crops.
**Biotech and the Environment (opinion):** This scientist examines six ways GMOs make agriculture more environmentally friendly.

**A Cautious Approach (opinion):** This group worries that new biotech products could overwhelm federal regulators, and they hope the U.S. regulatory system achieves a balance among competing interests, risks, and benefits--while also committing to more research.

**Impact of the Precautionary Principle on Feeding Current and Future Generations:** This CAST paper looks at the history and purpose of the precautionary principle and examines problems of ambiguity, arbitrary application, and bias against new technologies.

**The Importance of Trees:** According to this Ohio State University information, trees impact climate by regulating the exchange of water and energy between Earth's surface and the atmosphere.

**Growing a Valuable Spice:** As spring crocus blooms approach, some growers have visions of a fall-flowering crocus that produces saffron, the world's most valuable spice.

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**International News**

**Still Ain't Nothin' Like the Real Thing (video):** Researchers in Japan have successfully used a tiny drone to pollinate an actual flower, a task usually accomplished by insects and animals.

**Bumbling about Bees (video):** During the last 20 years--due to many reasons--bumble bees have suffered a large decline in population and habitat. They are a key factor in pollination.

**Brazil Meat Scandal (update):** A scandal over allegations of bribery in Brazil's meat-packing industry to allow the sale of expired meat deepened as the EU, China, and Chile decided to halt some Brazilian meat imports.

**Germans and Raw Milk:** German officials published an interim report on administrative proceedings concerning conditions of the supply of raw milk.

**The Ants Go Marching:** Chinese research reveals that ants are hardworking and beneficial insects--they increase air, water flow, and organic matter in soil.

**Promoting Ag Trade:** U.S. exporters recently met with hundreds of buyers and representatives of Japan's retail and food service industries at FoodEx Japan, Asia's largest food trade show.
Biomass and a Circular Economy: As an example of a "circular economy," a new plant in Europe will convert residual products from factories to bio natural gas.

General Interest News

Hearing Farmer Voices (video): Various members of the agriculture industry explain why producers should respond to surveys conducted by the USDA.

A Mighty--and Useful--Wind: This site shows how wind turbines use blades to collect kinetic energy--the top wind-producing states are Texas, Iowa, Oklahoma, California, and Kansas.

Tilting at Windmills (related to above): This blog includes links and commentary about the wind-energy boom.

A Tool for MicroRNA Study: Researchers at the University of Nebraska-Lincoln found evidence that microRNAs can migrate between organisms and possibly affect genes in their new homes, particularly when in cow-produced milk.

Early Spring Blues? While many in the United States may have enjoyed one of the warmest winters on record, the early spring-like weather has some negative consequences for agriculture and ecology.

Immigrants and Food Production (opinion): In this editorial, Tamar Haspel wonders whether or not affordable produce depends on illegal immigrants.

Front Lines of Food Safety (opinion): According to this story, more retailers see the value of using produce from growers certified by the Equitable Food Initiative--a system that allows workers to point out problems.

Spring Reading List (opinion): Food Tank has compiled 17 books to educate, inform, and inspire us this season--dealing with health, food, and the environment.

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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