

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 the CAST organization.

In This Issue..... Click to Read

[Scientific Game Changers?--P.2](#)

[Animal Agriculture News](#)

[Food Science and Safety News](#)

[Plant and Environment News](#)

[International News](#)

[General Interest News](#)

Southern Lights



The Aurora Borealis' southern counterpart occurs when cosmic rays or solar winds interact with earth's upper atmosphere. [These views](#) come from a photographer near Sydney, Australia.

BCCA Nominations

Nominations are open for the [2016 Borlaug CAST Communication Award](#), an honor that recognizes professionals working in the agricultural, environmental, or food sectors who are promoting agricultural science in the public policy arena.

Top Pig Farmer

The National Pork Board is accepting applications for its 2016 America's [Pig Farmer of the Year](#).

Ag Jobs

January 8, 2016

Tech, Ag, and Innovation

Agriculture faces many challenges, and according to some, hope lies in the unfolding of a "New Green Revolution." This article [emphasizes the need for improved production techniques and tech innovation](#)--all spurred by agricultural research and development.



The words "game-changer" or "breakthrough" get thrown around a lot, and [these seven innovations](#) made headlines in 2015. How will food production be affected? Agriculture already incorporates many tech changes, and in some cases, it may be at the forefront. Biotechnology is one example, and genetics could be the most influential.

Some innovations alter the way scientists work, and according to this report, it will be [impossible to imagine biology without CRISPR-Cas9](#). Scroll down to page two for more about ag and innovation--especially regarding the amazing field of gene editing.

News and Views

** **Unfolding News--GMO Labeling:** Campbell Soup Company announced its support for the enactment of federal legislation to establish a single [mandatory labeling standard](#) for foods derived from genetically modified organisms.

** **Dietary Guidelines:** The Departments of Agriculture and Health and Human Services released the [latest iteration of the Dietary Guidelines](#) for Americans--sugar use is in the spotlight; lean meat holds its own; the term "sustainable" is a no show. [Check here for analysis](#) from the International Food Information Council.

** **Mixed Reactions to Pesticide Report:** According to a new EPA report, a widely used neonicotinoid insecticide poses a [risk to honey bees](#). The release drew criticism from a leading manufacturer of the product as well as environmental groups.

This national survey projects the [good news about the average starting salary](#) for agriculture and natural resources graduates.

Not Just Spurs and Hats

Riding horses and driving early--these ten items indicate you [might be a ranch kid](#).

Science iBook

Ohio State University students have written a free iBook describing some of Earth's biggest challenges and how people are using [cutting-edge science to develop solutions](#).

Ag Robot Grants

The USDA National Robotics Initiative [launched a grant competition](#)--\$3 million will go to create agricultural advances involving robots.

CAST Social Media

Check the popular CAST [Catch of the Day](#)



[here](#), and if you want to know why Mom's [cinnamon rolls were not mentioned](#) in the government's Dietary Guidelines, check this [blog](#).

**** Health Advice or Junk Science?** This article claims that many of the health articles we read are junk--and it provides a [list of related terms and definitions](#).

**** Lots of Comments--Naturally:** The FDA has [extended its deadline for accepting public input](#) about the use of the word "natural" on food labels. With more than 3,300 comments already on file, the new deadline is May 10.

**** Top Ag Story Lists:** These are the [ten most viewed stories](#) of 2015 according to *AgriMarketing.com*, and these [eleven ag issues](#) were the most important, according to *farmfutures.com*.

News from the Far Side of the Barn

Stuffed Squid or Jumbo Calamari

Anyone? (video): This [footage of a rare giant squid](#) shows that maybe old Jules Verne wasn't so far off the mark after all.



From Bratophobia to

Gastrosexual: Our food-obsessed media landscape has proven fertile ground for wordplay, and this humorist has collected many of them in a [modern food dictionary](#) called *Eatymology*.

Food Photo Stylists: These food stylists serve up secrets on how to make common dishes look ready for their close-ups--think [mashed potato milkshakes and lipstick on strawberries](#).

Game Changing Science... and Agriculture

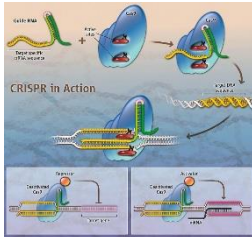
The lists of the "most exciting science breakthroughs" invariably include gene editing. It's no surprise that agriculture is leading the way in both crop and livestock sectors. For example, the University of California-Davis is studying [gene-editing techniques in relation to Holstein cow production](#). Dr. Alison Van Eenennaam is managing the project. Van Eenennaam, a respected expert on biotech issues related to agriculture, has been the task force chair for two influential CAST publications--an [issue paper about GMO labeling](#) and a commentary about food from [genetically modified animals](#).

Gene editing is a hot topic now because of CRISPR, a new method that--according to some--could [revolutionize medicine](#). Cheaper and more precise than past gene editing, this promising tool has also raised concerns. In this interview, Gwen Ifill talks to Jennifer Doudna of the University of California-Berkeley and Paul Knoepfler of the University of California-Davis.



UC-Davis geneticist [Alison Van Eenennaam](#)--2014 BCCA recipient.

Recent stories about CRISPR include the potential to eradicate some diseases--and mention the "designer baby controversy." A few examples:



* This piece says that genetic engineering on a planetary scale used to be the [stuff of science-fiction dreams](#)--sometimes nightmares.

* These researchers from Duke University show how the technology might [treat genetic disorders](#) that cause muscle breakdowns.

* This article says the most exciting CRISPR uses are not gene editing--they are methods to [control genes rather than alter them](#).

Note: CAST's [Ag Innovation Series](#): This ambitious 12-paper project looks at specific technology programs, policies, and techniques that will advance global food security. Topics will include issues in animal agriculture, food science, and crops and soils. Led by teams of experts, the Ag Innovation series focuses on smart science and intelligent innovation--the dramatic changes needed to accelerate productivity in crop and animal systems while reducing negative impacts on the environment. CAST will present the work to policymakers, corporate leaders, government officials, NGOs, students, stakeholder groups, and the general public.

Friday Notes News Categories

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P.1 aurora pic from [bbci.co.uk](#), candy pic from [candycrate.com](#), science pic from [agra-net.net](#), and squid pic from [cryptomundo.com](#). P.2 genetic pic from [doublexscience.org](#). Animal Sec. yak pic from [pleated-jeans.jpg](#). Animal Sec. bug pic from [youtube.com](#). Plant Sec. flood pic from [columbian.com](#). Inter. Sec. Adesina pic from [telling.com](#). Gen. Sec. oceanscraper pic from [turner.com.cnn](#). Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service.



Animal Agriculture and Environmental News

Killer Winter Storm (video): Dairy producers in Texas and New Mexico have estimated that the number of [animals that died](#) during the recent winter storm Goliath will climb to more than 30,000. [Updated numbers and information](#) in this report.

Bird Flu Research: The debate regarding a [bird flu research moratorium](#) flares up again.

Pulled Pork the New Bacon? Pulled pork has gone from a regional cuisine to one of the fastest-growing [pork product categories](#).

Chicken Health: Researchers at the University of Arkansas have identified a species of bacteria associated with lameness in broiler chickens, bringing scientists closer to [finding a way to prevent infections](#).

Another Company Will Go "Cage Free": Nestlé, the world's largest food company, announced that it will transition to using only [cage-free eggs](#) in all of its U.S. products within the next five years.

Farmers, Livestock, and Veterinarians: This animal health expert urges farmers to form a



This snow yak seems to enjoy winter, but a Texas blizzard was deadly for cattle.

veterinary/client/patient relationship to deal with the changes coming regarding the [Veterinary Feed Directive](#).

Managing Carcasses: The USDA is issuing a final [environmental impact statement for carcass management](#) alternatives that could be implemented during an animal health emergency.

Dairy Girl: The founder of the [Dairy Girl Network](#) uses energy and common sense to promote an organization with networking and programming opportunities for women in the dairy industry.

Can I Bid on My Own Cows? Police say a farmer working at a southwestern Pennsylvania livestock auction [recognized his own stolen cows](#), leading to the arrest of a suspect.



Food Science and Safety News

A "Natural" Way to Gain Weight? (video): According to this article, we need to watch out for "fat-free" cookies and the "whole grain" pasta that could actually [cause us to overeat](#).

Ear Worms from Food Companies (video): These traditional [food jingles](#) have had a tendency to get stuck in our heads.

Food Safety Chipmunks (video): The USDA and the Ad Council are using Alvin and the Chipmunks to emphasize the [importance of safe food handling](#).

A Top Ten List to Avoid: This list includes the ten [biggest foodborne illness outbreaks of 2015](#).

Entomophagy: The insect foodies are still buggin' us about the [benefits of eating beetles](#), worms, and cockroaches.

Antimicrobial Alternative? The increasing global attention to the [threat of antibiotic resistance](#) has spurred research and development of antimicrobial alternatives. One such alternative could be bacteriophages.

Do GMOs Really Exist (opinion)? This writer claims that GMOs are [difficult to define](#) and in some ways more like a metaphor we use to talk about a set of ideas.

More Trouble for Chipotle: Officials with Chipotle Mexican Grill say they will "fully cooperate" after receiving a subpoena from a federal grand jury seeking [documents related to a norovirus outbreak](#).

Irradiation and Food Quality (opinion): This report says a "phytosanitary treatment" [maintains fruit quality](#) for long-distance transportation, distribution, and storage.

Counting Calories Electronically: A new gadget promises to reveal the nutritional value of your meal by [scanning its chemical makeup](#).

Want a Slice of Piecaken? This list includes the [ten best new food words](#) for 2015, according to *The New York Times*.



Mmm. Crunchy on the outside;
chewy on the inside.



Plant Agriculture and Environmental News

A Strong Pulse (video and links available): 2016 is the United Nations [International Year of Pulses](#)--grain legumes such as dry beans, chickpeas, and lentils that are high in protein, fiber, and micronutrients.

Unusual Winter Flooding: The [impact that flooding](#), waterlogging, and potential ice sheeting may have on the winter crops--especially wheat--could be significant.

New Soybean Disease: Mississippi State University researchers [identify a new disease](#) that has reduced yields in several soybean fields across the state in recent years.

Soybean Cyst Nematode: The source of genetic resistance used for decades to manage soybean cyst nematode is becoming less effective, and this article looks at [what might be on the horizon](#) for growers.

Biofuel Exports: The U.S. Department of Agriculture announced a significant jump in [ethanol exports to China](#) this year, following a USDA-led trade mission to the country last year.

Taking the Fun Out of a Rice Fungus: Plant scientists are uncovering more clues critical to [disarming a fungus](#) that leads to rice blast disease and devastating crop losses.

Photosynthetic Shift: Swedish researchers have discovered that increasing levels of carbon dioxide in the atmosphere have [shifted photosynthetic metabolism](#) in plants over the 20th century.

Boosting Wheat Research: The International Wheat Genome Sequencing Consortium announced the production of [a whole genome assembly of bread wheat](#), the most widely grown cereal in the world.



Unusual winter floods affect the Midwest.



International News

Let the Machine Do the Stooeping (videos): Some farmers in Japan rely on cool, [over-the-top machines](#) to plant rice.

Message from Dr. Akin Adesina: The President of the African Development Bank says [Africa has much to offer](#) the world in the battle against climate change.

War on Unhygienic Food: A woman whose [campaign to clean up the kitchens and food factories](#) of Pakistan has become a national celebrity nicknamed "The Fearless One."

Hello Kitty? Hello Kit Kat! Japan's [Kit Kat obsession](#) results in flavors ranging from passion fruit cheesecake to sweet potato--and they are used as good luck charms for students.

Global Guidelines: Here are some [interesting food guidelines](#) from around the world (see related article on P.1 regarding U.S. guidelines).

The Importance of Farm Safety: The [death of three young girls](#) on a Canadian farm has acted as a catalyst for discussing child safety on farms.

Euro Pork Becoming Russian Bacon? Exports of European pork could well be making their way to Russia again, following [successful talks](#) between EU and Russian officials.



Dr. Adesina received the 2010 [Borlaug CAST Comm. Award](#).

Blowin' in the Wind in Britain: According to this group, 2015 was a [record year for wind energy generation](#) in the United Kingdom--with electricity for homes, factories, and offices.

Drones Gone International: The traditional image of a farmer standing in a field may get a 21st-century makeover as researchers explore the use of [drones on farms from Sri Lanka to Uganda](#).



General Interest News

Didn't James Bond Have a Car Like This? A [flying, swimming drone](#) may soon be able to aid search and rescue missions for the United States Navy--and even locate deep sea mines.

Water and Nutrient Runoff: This presentation summary from the 2015 Illinois Farm Economics Summit provides a good overview of [water issues involving nutrient runoff](#).

Groundwater Research: As water becomes an increasingly hot topic, the University of Nebraska's School of Natural Resources is poised to be at the forefront of [groundwater research and analysis](#).

Iowa Ag Water Alliance: IAWA includes the Iowa Soybean Association, Iowa Corn, and Iowa Pork Producers. It is focused on improving the state's [water quality](#).

Nitrates and Clean Water: A report from the Clean Water Alliance--a coalition of Iowa agricultural groups--shows [higher nitrate levels](#) than in past years in some watersheds.

Aeguorea Project Goes Deep: This architect has plans for a series of underwater ecological villages that could house up to 20,000 people--self-sufficient "[oceanscrapers](#)" reaching to the sea floor.

I, Tractor Robot: Agriculture must become more efficient--some say [robots and autonomous supertractors](#) are important solutions.

Turning a Classroom into a Farm (video): A life-long Bronx resident and educator came up with a unique way to [engage his students and change their surroundings](#).



Oceanscrapers coming to a bay near you?

The "Twitter" of Thesis Papers: These Mississippi State graduate students had less than three minutes to convey their months or years of research during the university's third annual [Three Minute Thesis competition](#).

Fairways to Farmlands: From Washington to Michigan to Virginia, [golf courses are going under](#). Some are converting back to their previous form--farmland.

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.



If you have a good idea for a CAST publication, contact us by [clicking HERE for the "Proposal Format](#) and Background Information Form."

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 Colleen Hamilton at 515-292-2125, ext. 224 or chamilton@cast-science.org, or [CLICK HERE](#) for CAST membership information.

Societies, Companies, and Nonprofit Organizations Serving on the CAST Board of Representatives

- * 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 Society for Nutrition Nutritional Sciences Council
- * American Society of Agricultural and Biological Engineers



- * American Society of Animal Science
- * American Society of Plant Biologists
- * American Veterinary Medical Association
- * Aquatic Plant Management Society
- * California Dairy Research Foundation
- * Council of Entomology Department Administrators
- * Croplife America
- * Crop Science Society of America
- * DuPont Pioneer
- * Elanco Animal Health
- * Innovation Center for U.S. Dairy
- * Monsanto
- * National Pork Board

- * National Turkey Federation
- * North Central Weed Science Society
- * North Carolina Biotechnology Center
- * Northeastern Weed Science Society
- * Poultry Science Association
- * Society for In Vitro Biology
- * Syngenta Crop Protection
- * United Soybean Board
- * Weed Science Society of America
- * Western Society of Weed Science
- * WinField, a Land O'Lakes Company



CAST assembles, interprets, and communicates credible, science-based information regionally, nationally, and internationally to legislators, regulators, policymakers, the media, the private sector, and the public.

Members of CAST's Education Program

- * Iowa State University
- * Kansas State University
- * Mississippi State University
- * North Carolina State University
- * Texas A&M University College of Ag & Life Sciences
- * The Ohio State University
- * University of Arkansas System Division of Agriculture
- * University of California-Davis
- * University of Florida Institute of Food and Agricultural Sciences



- * University of Kentucky
- * University of Nebraska Agricultural Research Division
- * University of Nevada

Note: WinField Solutions (Land O'Lakes) provides sponsorship for the distribution of *Friday Notes* to the National Association of Agricultural Educators.

Dan Gogerty (Managing Communications Editor)
The Council for Agricultural Science and Technology
4420 West Lincoln Way
Ames, Iowa 50014-3347
Phone: 515-292-2125, ext. 222; Fax: 515-292-4512; E-mail: dgogerty@cast-science.org



** *With assistance from Carol Gostele (Managing Scientific Editor).*