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### **Axon—the ARS Intranet**



We hope you were able to attend the March 24th “Inform and Engage” webinar, but if the timing didn’t work for you, we’ll have the recording posted

on the [Axon Inform and Engage page](#) soon.

Also, make sure to check out the “Axon Scavenger Hunt” by clicking on the “Engage” menu on the Axon home page. If you are one of the first 100 people to accurately complete it and email it to [axon@ars.usda.gov](mailto:axon@ars.usda.gov), you will become a proud owner of an Axon heat-activated mug. Entries must be received by **April 3, 2015**. Another way to score a mug is to make a significant contribution to Axon. There is no deadline on this route while mug supplies last.

New content is added to Axon daily, so check out the home page for “What’s New on Axon” and Announcements.

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### **Your Two Cents (Y2C)**



[www.ars.usda.gov/yourtwocents](http://www.ars.usda.gov/yourtwocents)

Happy spring from Y2C! As we approach our fifth birthday, we have changes in store for Y2C, such as developing more comprehensive lists of subject matter experts to find you the best answers. And we’re still accepting applications for our revamped Focus Group. If you’re interested, please send us:

- your name and that of your immediate supervisor
- your position title
- the city and state you’re located in
- a brief statement on why this is an opportunity you want to pursue.

Your commitment to the Y2C Focus Group includes:

- an hour or so each week to review what has come in to Y2C and the responses that have been posted
- a weekly conference call of about an hour.

Please send your “application” to [yourtwocents@ars.usda.gov](mailto:yourtwocents@ars.usda.gov) by **April 10, 2015**. ❖

*Please submit story ideas and national award items to Sue Kendall, [sue.kendall@ars.usda.gov](mailto:sue.kendall@ars.usda.gov), or call 301-504-1623.*

*Please submit photos for Photo Corner to Carol Nathan, [carol.nathan@ars.usda.gov](mailto:carol.nathan@ars.usda.gov), or call 301-504-1649.*

## Ethics

### Gambling

March Madness is upon us, and in the spirit of fun, many sports fans are accustomed to placing a friendly wager on their favorite team.

**Question:** Can this be done in the office if participation is strictly voluntary? **Short Answer:** No.

Regardless of whether participation is voluntary, if done in Federally owned/leased property or while on official duty, gambling activities violate Federal regulations that prohibit gambling in the Federal workplace. However, merely predicting teams that will advance in a bracket strictly for fun or for bragging rights is not the type of conduct that generally would raise concern.

For more information on workplace gambling, click [here](#). For other ethics topics, please visit the [Science Ethics](#) website. ❖

## Around ARS

### ARS Co-Hosts Family Farmers



**Matt Sanderson** speaks to family farmers.

More than 200 farmers attended “[Farming for the Bottom Line](#),” a program co-hosted by the USDA-ARS Northern Great Plains Research Laboratory (NGPRL), the USDA Natural Resources Conservation Service, North Dakota State University, Bismarck State College, and the Area 4 SCD Cooperative Research Farm. Attendees at the March 2 event, aimed at family farmers, learned about a wide range of factors that are important to their bottom line. Presenters included research leader **Matt Sanderson**, soil scientist **Mark Liebig**, and economist **Dave Archer** from NGPRL in Mandan, ND; agronomist **Shannon Osborne** from the USDA-ARS North Central Research Laboratory in Brookings, SD; and invited colleagues from universities and industry. See [Photo Corner](#) for more. ❖

### Reaching Out by Reading To

Three scientists from the ARS Dale Bumpers National Rice Research Center in Stuttgart, AR, recently participated in “Real Men Read” at a local elementary school. The program’s objective is to provide positive male role models and highlight the importance of reading. Plant physiologist **David Gealy**, plant physiologist **Neal Teaster**, and geneticist **Aaron Jackson** each read a short book and some short poems. They also talked to the children about their work as scientists, about rice farming, and about the “farm to table” concept of food.



**Geneticist Aaron Jackson** at the “Real Men Read” program.



**Matt Moore** and teacher **Erica Avent**, along with friends **Thing 1** and **Thing 2**.

ARS ecologist **Matt Moore** participated in “Read Across America Day” in honor of Dr. Seuss’s birthday on March 2. Moore, who is in the Water Quality and Ecology

Research Unit in Oxford, MS, read “The Lorax” to several 5th grade classes at a local school. Moore says that teacher Erica Avent won the school’s “Teacher of the Year” award for her efforts in science. “I always love to brag on the science teachers I work with in the local school district...especially how they are influencing kids to pursue studies in science,” he says. Moore returned to the school later in the month to talk to 6th grade science classes about “adaptations and symbiosis.” ❖

### ARS on JoVE

Are you a visual learner? If so, you’ll love [JoVE, the Journal of Visualized Experiments](#), the world’s first peer-reviewed scientific video journal. Established in 2006, JoVE is a PubMed-indexed video journal devoted to publishing scientific research in a visual format. Check out [this link](#) to view interesting scientific videos posted by **several ARS scientists** and their collaborators. ❖

## Planting the Seeds of Interest



David Gealy and teacher Christy Puterbaugh discuss seed biology with a group of middle-schoolers.

**David Gealy**, plant physiologist with the Dale Bumpers National Rice Research Center in Stuttgart, AR, conducted a hands-on seed biology experiment at a local middle school in February 2015. The event was in support of the “Alternate Learning Education” program, which includes 5th and 6th graders who

have learning challenges. The students prepared seed-germination tests and monitored seedling development for a few weeks. Gealy returned in March for a follow-up session. “Several of the children were particularly engaged in these activities, and they asked—and answered—lots of great questions,” he says. See [Photo Corner](#) for more. ❖

## Exploring Aquaculture

On March 6, ARS geneticist **Nagaraj Chatakondi** gave a presentation on “Opportunities in Aquaculture and Fisheries” to a local group called “[Youthbuild](#).” Chatakondi is in the Warmwater Aquaculture Research Unit in Stoneville, MS. Youthbuild is a program tailored to helping out-of-school youth become responsible and productive citizens and to explore employment opportunities. Plans are for the Youthbuild group to visit ARS’s research facilities at Stoneville soon. ❖



Nagaraj Chatakondi addresses a Youthbuild group.

## Upward Bound Career Day

On March 4, ARS agricultural engineer **Chris Butts** of the National Peanut Research Laboratory, Dawson, GA, served as a career consultant at the annual [Upward Bound Career Day](#), sponsored by the Office of Multicultural Educational Programs of [Abraham Baldwin Agricultural College](#) in Tifton, GA. Butts shared his 30+ years’ experience as an agricultural engineer with 9th to 12th graders. The goal of the event is to inspire traditionally underserved high school students to pursue careers in science, technology, engineering, or mathematics. ❖

## Sage Grouse Habitat Webinar

Known for its showy and noisy mating ritual, the sage grouse, a bird native to the American West, depends on a habitat of sagebrush for food and protection. Invasive cheatgrass has encroached on the bird’s habitat, and its numbers have diminished. The Eastern Oregon Agricultural Research Center (EOARC), in Burns, OR, partnered with the [Sage Grouse Initiative](#) to create a 23-minute instructional video designed to help conservationists and landowners manage for more resilient sage grouse habitats. ARS rangeland scientist **Chad Boyd** appears in the webinar, which can be viewed [here](#). ❖



A male sage grouse. Photo by Stephen Ausmus.

## FFA Judging Teams Practice at ARS



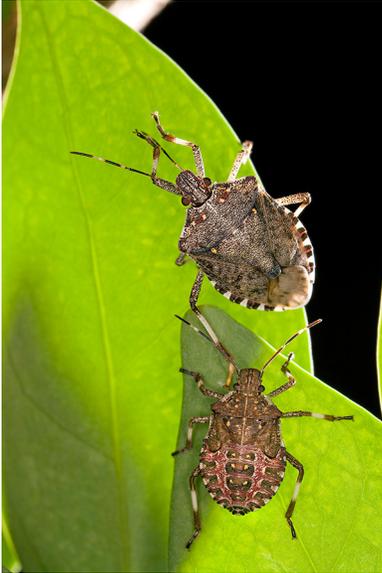
FFA teams practice their livestock-judging skills.

On March 12, the USDA-ARS **Dale Bumpers Small Farm Research Center** (DBSFRC) in Booneville, AR, collaborated with the [Logan County Conservation District](#) to host FFA judging teams

from 42 schools. The teams came to Booneville for judging practice for FFA district contests. DBSFRC hosted 200 students participating in land surveying (soils) and livestock judging. Soil teams practiced in soil pits around the center, and livestock teams judged groups of replacement heifers, feeder steers, and replacement ewes. The center has helped host the FFA day since 1994. See [Photo Corner](#) for more. ❖

## Notable Awards

### Stink Bug Team Wins Award



Brown marmorated stink bugs are harmful to crops and a nuisance to people. Photo by Stephen Ausmus.

An interdisciplinary scientific team led by ARS entomologist **Tracy Leskey** has been taking aim at the invasive brown marmorated stink bug (BMSB) in recent years, and now the team has received international recognition for its work. The [StopBMSB](#) program was selected to receive an [International IPM Award of Recognition](#) at the [8th International IPM Symposium](#) in Salt Lake City, UT, March 23-26. The award reflects the

team's collaborative and integrative efforts to solve the problems posed by BMSB to specialty crops. Project leader Leskey is with the USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV. ❖

### Vander Meer Honored by ACS

The [American Chemical Society](#) (ACS) recently recognized ARS chemist **Robert Vander Meer** for his 50 years as a member. The honor includes lifetime membership in ACS and waiver of registration fees for regional and national meetings. Vander Meer is research leader in the Imported Fire Ants and Household Insects Unit in Gainesville, FL. Over the years, ACS has highlighted several of Vander Meer's research discoveries with ARS, and in the 1970s, he started the first ACS Student Chapter outside of the United States while serving in the Peace Corps in the Fiji Islands. ❖



Robert Vander Meer in his lab. Photo by Peggy Greb.

### Goodrich Recognized by EPA Administrator

During the 5th Interagency Conference on Research in the Watersheds in early March held in North Charleston, SC, ARS hydraulic engineer **Dave Goodrich**, in the Southwest Watershed Research Unit at Tucson, AZ, received a personal note of recognition from Environmental Protection Agency (EPA) Administrator Gina McCarthy for his work on the EPA report "Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence." The report can be found [here](#). ❖

### Gardner a "Super Woman" of Maize

In recognition of International Women's Day, March 8, the [International Maize and Wheat Improvement Center](#)—better known as CIMMYT—called for stories about women who have made a difference in the maize and wheat sectors. ARS plant biologist **Candice Gardner** was nominated as one of those "Super Women" by former colleague Vivian Bernau. Gardner is research leader for the North Central Regional Plant Introduction Station, in Ames, IA, and was nominated for her work with maize. [Gardner's story](#), along with the others, was featured on the CIMMYT website in early March. ❖

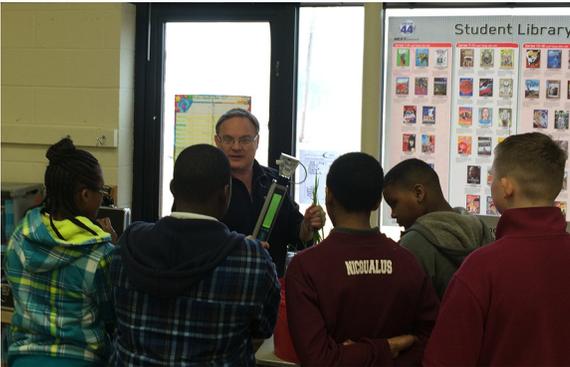


Candice Gardner. Photo credit: Iowa State University.



# Photo Corner

## Planting the Seeds of Interest



ARS plant physiologist David Gealy shows students a portable infrared gas analyzer, which is used to determine the rate of photosynthesis. [See story.](#)



Middle school teacher Christy Puterbaugh inspects germinating seeds at an outreach event featuring ARS plant physiologist David Gealy. [See story.](#)

## FFA Judging Practice



FFA students gain experience in judging livestock at ARS in Booneville, AR. [See story.](#)

## Farming for the Bottom Line



ARS agronomist Shannon Osborne presents information about crop diversity, soil health, and reducing inputs. [See story.](#)



ARS economist Dave Archer discusses how crop rotations can affect the farmer's bottom line. [See story.](#)

## Did You Know?

### Weird Mite a Worldwide Hit, Thanks to ARS Microscopy Lab



**Buckeye Dragon Mite (*Osperalycus tenerphagus*).** Image by ARS Electron and Confocal Microscopy Research Unit.

If you were a bacterium or yeast inhabiting the soils, you definitely wouldn't want to encounter *Osperalycus tenerphagus*, a.k.a. the Buckeye

Dragon Mite. Less than 1 millimeter long, this wormlike mite sports mouth appendages designed to capture hapless microbes and suck out their juices.

The tiny but ravenous feeder is a descendent of mites from around 400 million years ago. But it wasn't until February 2014 that the species became known to science through the efforts of a team of Agricultural Research Service (ARS) and Ohio State University (OSU) scientists.

Sam Bolton, an OSU doctoral researcher at the time working under the guidance of OSU professor Hans Klompen and funded by the Smithsonian National Museum of Natural History Fellowship Program, literally unearthed the species from the university's campus grounds. Bolton's familiarity with the work of **Ron Ochoa**, an entomologist specializing in mites at ARS's Systematic Entomology Laboratory in Beltsville, MD, led to a collaborative project to scientifically describe the species.

Ochoa enlisted the talents of microscopist **Gary Bauchan** at the Electron and Confocal Microscopy Research Unit, a part of ARS's Soybean Genomics and Improvement Laboratory, also in Beltsville. Keen on preserving the physical integrity of the live specimens that Bolton had brought with him from Ohio, Bauchan used a technique pioneered at his facility to prepare the mites for low-temperature electron microscope imaging.

The technique, which generates high-resolution images of specimens by "bouncing" electrons off them, necessitates flash-freezing the specimen in a vat of liquid nitrogen and then spraying it with a thin coat of platinum. Together, these steps allowed Bauchan to capture the mites in their final moments of life and in the physically intact state

so crucial to their scientific identification and accurate description.

The images, magnified up to 30,000 times the Dragon Mite's original size, were visually stunning and, as it turns out, a huge hit with not only the scientific community—as reported in web pages by the American Association for the Advancement of Science, Smithsonian Institution, USDA's blog page, and Entomological Society of America—but also the public at large, thanks to coverage by *Wired*, *Scientific American*, *The Washington Post*, *The Columbus Dispatch*, *The Guardian* (Britain), *Estadao* (Brazil), *Der Spiegel* (Germany), and other worldwide news organizations.

The team published its findings online February 20, 2014, in the *Journal of Natural History*, marking the first report of a new mite species in the family Nematolycidae in 40 years. Since then, their paper has been downloaded an astounding 87,500 times and counting.

"The number of downloads and views of this scientific paper are possibly unprecedented for our center's research," says Bauchan.

"Every time I see the latest figure on the number of downloads, I am flabbergasted," says Ochoa, whose work, together with Bauchan's, provides vital support to other researchers as well as plant protection and quarantine officials tasked with safeguarding U.S. agriculture from invasive species.

The Buckeye Dragon Mite, for its part, poses no such threat—unless, of course, you're a tasty soil bacterium.—  
*Written by Jan Suszkiw, ARS Information Staff.*

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