

People & Places

# Using microbes to help sagebrush

By BRAD CARLSON  
Capital Press

BOISE — Researcher Leonora Bittleston and her team at Boise State University are hunting for the microbes and fungi that help sagebrush plants thrive during drought.

Their work could benefit sagebrush and other native plants and wildlife, and even reduce the risk of catastrophic wildfire.

“If we find beneficial microbes that help sagebrush to tolerate stress better, then it could lead to better restoration of the sagebrush ecosystem across the Sagebrush Steppe that covers much of the West,” said Bittleston, an assistant professor at Boise State.



Leonora Bittleston



John C. Kelly/BSU

Leonora Bittleston at work in the foothills northwest of Boise.

populations. The microbes in turn could be added to sagebrush seedlings before planting, increasing the survival rate.

“We first have to figure out which might be beneficial,” Bittleston said.

She and students have spent about a year taking samples in the foothills northwest of Boise.

They sampled healthy sagebrush leaves that showed no sign of disease. That boosts the odds the microbes and fungi are beneficial — but it is also possible they have no effect on the plant the researchers are studying.

During last year’s especially hot summer in Boise, “our plants all survived,” Bittleston said. “But they are mature adult plants.”

It is likely seedlings or

more vulnerable plants died in the heat wave, she said.

The heat also enabled the researchers to explore how the microbial communities fared.

Bittleston said the researchers have found fungi that are mostly yeasts, a single-cell form of fungi. Many of the yeasts are also found in other dry environments.

Some of these yeasts have substantial melanin, which provides ultraviolet protection.

“We know it helps fungi. We don’t know if it helps the host plant,” a topic of continued study, Bittleston said.

Next steps include procuring samples, analyzing data, extracting DNA, DNA-sequencing microbial communities and exploring correlations with weather

variables. The team is looking at how the presence of particular microbes correlates with weather station data on a site’s temperature, humidity, precipitation and other measures. DNA-sequenced microbial communities also are studied in relation to weather data.

Researchers are also studying how seedlings are affected by adding a whole community of microbes versus a single microbe.

A doctoral candidate is introducing microbial communities in growth chambers to determine if they help the sagebrush plant grow, or tolerate drought.

“Our ability to look at microbes through DNA sequencing has increased a lot in recent years, as has our appreciation of their importance beyond just being



## LEONORA BITTLESTON

**Occupation:** Assistant professor, Boise State University Department of Biological Sciences

**Education:** B.S., molecular environmental biology, University of California-Berkeley, 2007; Ph.D., organismic and evolutionary biology, Harvard University, 2016; postdoctoral fellow, environmental microbiology, Massachusetts Institute of Technology, 2016-19.

**Age:** 37

**Hometown:** Santa Cruz, Calif. Lives in Boise, Idaho.

**Family:** Husband Dan Beyer, an engineer and artist. They have one child.

**Hobbies:** Hiking, swimming, cooking, mountain biking, pottery.

pathogens,” Bittleston said.

The project is part of the larger Idaho Genes for Environment, Modeling, Mechanisms and Mapping — GEM3 — project funded through the National Science Foundation’s Established Program to Stimulate Competitive Research initiative.

# S.I. Livestock Hall of Fame honors inductees

Capital Press

TWIN FALLS, Idaho — The Southern Idaho Livestock Hall of Fame honored its newest inductees at its 61st annual banquet on Tuesday evening at the Turf Club.

The inductees were Guy and Sherry Colyer, Larry Hayhurst, Don and Patricia Pickett and John Reitsma (posthumously).

The Colyers operate Colyer Hereford and Angus in Bruneau, which consists of 300 registered Hereford cows and 75 replacement heifers. They have been producing embryo transfer calves since 1983, and 90% of their calf crop is the result of artificial insemination or embryo transplant.

The Colyers have produced the world record-selling Hereford bull, and four of their Hereford bulls have been two-time champions at the Denver Stock Show.

Guy Colyer was awarded the U.S. Livestock Industry Leader of the Year for 2017 by the National Western Stock Show. He has represented



The newest inductees to the Southern Idaho Livestock Hall of Fame at the inductee banquet in Twin Falls on April 12. From left are Larry Hayhurst, Sherry and Guy Colyer, Don and Patricia Pickett and John Reitsma's children Dirk Reitsma, Heidi Jarvis and Sean Mallett (accepting the award for their father posthumously).

the Hereford breed in many capacities including serving on the board of the American Hereford Association. The operation was recognized as the U.S. Senate Small Business of the Month for March 2018, and the family has been active in Hereford youth programs.

Hayhurst served as a brand inspector with the Idaho State Brand Department for 27 years and was

appointed state brand inspector in 1991, overseeing as many as 25,000 registered brands. During his tenure, he served a term as president of the Western State Livestock Investigation Association and as president of the International Livestock Identification Association.

Don Pickett operates Pickett Ranch and Sheep Company, headquartered in Oakley, with his two

brothers, David and Doug. In addition to the sheep operation, the family runs cattle in Idaho, Utah and Nevada and farms in areas around Oakley, Kenyon and Murtaugh.

Pickett also maintained a law practice for many years and was noted as a Lawyer of Distinction in agricultural law by the National Law Journal. He has served as chairman of the Idaho State Animal Damage Control Board and chairman of the Idaho Sheep and Goat Health Board. He has also served on the boards of Water District 140, the Southwest Irrigation District and the Oakley Canal Company.

Reitsma, now deceased, immigrated from the Netherlands to California in 1967 at the age of 19 and worked in the agriculture industry. In 1984, he moved to Jerome and started the first of many dairies, including organic. Along the way, he brought the first rotary parlor to Idaho, put robotic milkers on one of his dairies and started other business ventures.

# Oregon Ag Fest returns to state fairgrounds April 23-24

Oregon Ag Fest returns on Saturday and Sunday, April 23-24, with a heaping helping of fun and up-close experiences aimed at introducing children and their parents to the world of agriculture.

The 35th edition of Ag Fest kicks off Saturday from 8:30 a.m. to 5 p.m. and wraps up Sunday from 10 a.m. to 5 p.m. Children 12 and under will be admitted for free. Admission is \$9 for ages 13 and over. Parking is free.

“Our goal is to help kids gain a better understanding of the importance of agriculture to Oregon’s rural landscape, and to emphasize that most



of the event is completely free.” Ag Fest 2022 starts at 8:30 a.m.-10:30 a.m. on Saturday, April 23, with an old-fashioned ranch-style breakfast. Hotcakes, sizzling ham on the grill, Oregon-grown fruit toppings, scrambled eggs, juice, coffee and milk will be prepared by Linn County 4-H groups. Cost is \$8 for adults, and children under 3 years are free. Proceeds from the breakfast provide scholarships for 4-H camp and leader training.

There will be plenty to do and see at this year’s event. All activities center around locally grown products, which

allows families to celebrate the wonderful and diverse world of Oregon agriculture. The family fun includes:

- Meet “Nosey” the cow, goats, rabbits, pigs and other farm animals.
- Watch a llama show.
- Race a mini pedal tractor.
- Watch chicks hatch.
- See a sheep get a “haircut.”
- Listen to live music and enjoy family entertainment.
- Plant seedlings.
- Ride a pony.
- See logging demonstrations.
- Take a horse-drawn wagon ride.

• Watch dog-herding demonstrations.

- Visit garden and craft booths.
  - Watch cooking demonstrations and taste local foods.
- Oregon Ag Fest is sponsored in part by Oregon Farm Bureau, Tillamook, Wilco, Oregon Dairy Women, Oregon Department of Agriculture and Oregon Women for Agriculture, among many others.
- Ag Fest is a nonprofit 501(c)(3) volunteer organization dedicated to educating the public about the importance of agriculture. For more information go to [www.oregon-ag-fest.com](http://www.oregon-ag-fest.com).

## CALENDAR

Submit upcoming ag-related events on [www.capitalpress.com](http://www.capitalpress.com) or by email to [newsroom@capitalpress.com](mailto:newsroom@capitalpress.com).

### THROUGH SUNDAY MAY 1

**2022 Wooden Shoe Tulip Festival:** Wooden Shoe Tulip Farm, 33814 S. Meridian Road, Woodburn, Ore. Experience the beauty of 40 acres of tulips and over 200 acres of outdoor space and activities this spring. We are again offering tickets online only this year to minimize crowds and allow for more time to enjoy our fields. Hours: 9 a.m.-6 p.m. Monday-Friday; 8 a.m.-7 p.m. Saturday-Sunday. Website: <https://bit.ly/36o2wMD>

### THROUGH APRIL 24

**Spring Fair:** Washington State Fairgrounds, 110 9th Ave. SW, Puyallup, Wash. Celebrate spring at the fair and all things agriculture. Website: <https://www.thefair.com>

**Northwest Cherry Festival:** The Dalles, Ore., festival is set in the spectacular Columbia River Gorge and showcases the area’s deep agricultural heritage and Western roots. Phone: 541-296-2231 Website: <https://thedallescchamber.com>

**SATURDAY-SUNDAY APRIL 23-24**  
**California Antique Equip-**

**ment Show:** 10 a.m. International Agri-Center, 4500 Laspina St., Tulare, Calif. The show will showcase antique tractors, trucks and engines and will include vendors and activities such as a tractor pull, hay-bucking contest and tractor driving. Website: <https://www.antiquefarm-show.com>

**Oregon Ag Fest:** 8:30 a.m.-5 p.m. Saturday; 10 a.m.-5 p.m. Sunday. Oregon State Fairgrounds, 2330 17th St. NE, Salem, Ore. 97301. The goal of Oregon Ag Fest is to provide an experience for the whole family that is educational and fun. And, we keep it affordable! Kids age 12 and under are free; others are \$9.

Parking is free. Website: <https://oragfest.com/>

### SUNDAY APRIL 24

**Farm Workers of Treasure Valley — A Celebration for Earth Day:** 2-6 p.m. Treasure Valley Community College parking lot, 650 College Blvd., Ontario, Ore. This bilingual event will bring the community together to benefit food chain workers, including farm workers, processing plant workers and their families. Free meals, live music, children’s activities, food boxes, information on pesticide safety and growing gardens, as well as vaccination and booster opportunities. There will also be 20 organizations

with other information and freebies in addition to a raffle. Website: [www.pesticide.org/earthday2022](http://www.pesticide.org/earthday2022)

### TUESDAY APRIL 26

**Variable Density Thinning Workshop:** 6-8 p.m. Seaquest State Park, 3030 Spirit Lake Highway, Castle Rock, Wash. This practice dovetails with common small forest landowner management objectives like developing wildlife habitat and enhancing recreation and aesthetic value of a forest. It can also be a low-impact form of harvest that landowners can utilize to meet tax-based county harvest requirements. Website: <https://forestry.wsu.edu/sw/events/vdt2022/>



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