Newsletter

March-April 2026

WSU EXTENSION
Garfield County

Welcome to the WSU Garfield County Extension Newsletter!

This is an electronic newsletter highlighting events and topics of interest to residents of Garfield County and the surrounding area. This newsletter can also be viewed on our website: https://extension.wsu.edu/Garfield/

Do you have an event or subject you would like added to our newsletter or website? Would you like to be removed from our Extension Newsletter email list?

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LEADING THE WAY ON AI:
Pinpoint Forecasting Among the Tools WSU brings to Agriculture

We've come a long way from the Old Farmer's Almanac: These days, when farmers need to know about tomorrow's weather — or next month's weather — they can get a close-to home forecast from Washington State University's AgWeatherNet. That system does more than predict temperatures and precipitation. Drawing on data from 370 public-private stations across the state, it uses machine learning to power tools that help growers predict wheat yields, anticipate problems with pests, protect against frost and high heat, schedule irrigation, and more.

As the amount of location-specific data grows, it will fuel even more refined microclimate forecasting — down to the level of an acre. "It is happening now and we are improving it further," said Lav Khot, the director of AgWeatherNet and a professor of precision agriculture in the Department of Biological Systems Engineering with a focus on agricultural automation. "That's where AI comes in: How can we mine the information from this data and make better management decisions? It's really changing the game." WSU is playing a vital role in connecting big data with modern farming — marrying the strength of high-tech research with the public-service mandate of a land-grant institution to help farmers at every stage, from preparing for the growing season to harvest.

StockSmart, a tool developed at WSU in conjunction with the University of Arizona, uses GPS data to help ranchers and land agencies determine how much forage is available for livestock and where. A machine-learning guided metric developed in WSU Veterinary Extension uses data from dairy cattle to evaluate the disease burden among herds. WSU's smart orchard testbed in Mattawa is demonstrating how new smart agricultural technologies can be integrated and evaluated for meaningful adoption on the ground. All helping to pave the way for the farm of the future.

WSU's role at the forefront of AI in agriculture is reflected in its leadership of AgAID, a $20 million institute established with funding from the U.S. Department of Agriculture as part of the National Science Foundation's National AI Research Institutes program. The Institute combines the efforts of multiple research institutions, industry, and government partners to address agricultural challenges in the Pacific Northwest. The institute's mission is to build and sustain partnerships between AI and agricultural communities, driving research and the transfer of knowledge to meet some of agriculture's biggest challenges, including labor shortages, water availability, and climate change.

Ananth Kalyanaraman

"Agriculture, globally speaking, is experiencing a revolution because of how much data is being generated and gathered," said Ananth Kalyanaraman, the director of AgAID and professor and director of the School of Electrical Engineering and Computer Science. "There's been a deluge of data. The immediate question when there is a lot of data is what you do with it — what is the value of data? The value is the information you can get to understand what is going on in the fields." In addition to research, the institute has an educational goal — teaching students, obviously, but also helping introduce farmers and farm workers to new technologies. WSU and AgAID are in a prime position to do such outreach, based on the trust established over many years of the university's land-grant service. "We need academia in the middle — academia is the way to connect big tech to a rural, societal challenge like agriculture," said Kalyanaraman, who also heads up the Advancing AI Research Working Group formed by the WSU Office of Research. "I think that education and workforce development very much have to go hand in hand with research when it comes to AI."

Lav Khot

Forecasting Streamflows

Most of the stream water that irrigates crops in the West comes from melting mountain snow. Being able to predict how much water the mountain snow will produce is crucial for farmers and resource managers. One recent example is a new tool developed by Kalyanaraman's lab in collaboration with Kirti Rajagopalan, an assistant professor in the Department of Biological Systems Engineering, that could someday provide daily or weekly forecasts for water availability similar to weather forecasts, based on how much snow is in the mountains. Predicting how much water will be available is important for irrigation, flood prevention, fisheries, and hydropower. In a recent publication, the WSU team demonstrated that their model was more accurate in predicting the snow-water equivalent — the amount of water available in the mountain snowpack — than current models in most cases across 500 locations, for both daily and weekly forecasts. The plan is to eventually produce a public dashboard that agencies could use for both short-term and long-term planning.

That tool is just one of the ways that WSU researchers are working to build data to fuel AI applications to help farmers succeed. "There are many different kinds of data we gather to understand different crop stresses and predict the crop stresses in advance, so the farmer can make better decisions," Kalyanaraman said. Khot said that a key element of refining the precision of crop stressors forecasting is farm level data — information on everything from soil conditions to tree canopies to local microclimates. The AI/ML driven decision support tools available through AgWeatherNet are already more precise than other forecasting models. But the network is working with farmers to get them to contribute more localized information about conditions through AgWeatherNet Smart Farms and smartphone applications driven crowdsourcing. "We are educating growers so they can collect better quality data on their farms that will contribute to realize AI-driven smart farms in the near future," Khot said. As more and more such information is gathered, it will feed AI models to make ever more precise predictions.

"If you have the data sets that are collected for your block, you can synthesize everything and get the information in a quick second about your crop health, where the crop is doing well or poorly, and associated inputs management decision making" he said. "I'm just amazed at all the possibilities of what crowdsourced quality data and AI can bring into precision farming in the state of Washington."

WSU researchers use drones to gather data on farm conditions to help drive AI-assisted forecasting tools. WSU's leadership in AI for agriculture is reflected in its leadership of AgAID, a network of research institutions and industry partners (photo courtesy of WSU).

75% OF AMERICANS
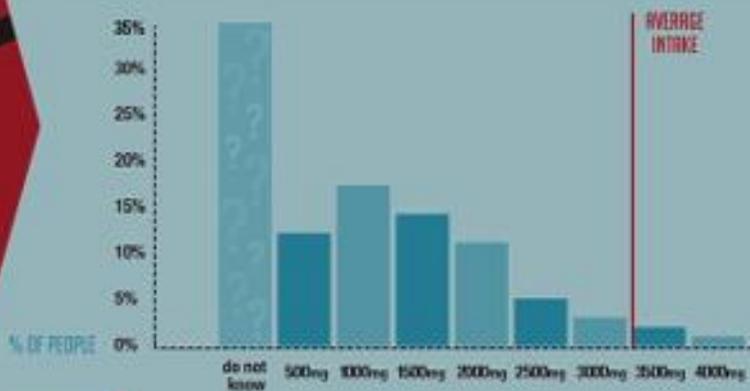
WANT LESS SODIUM

IN PROCESSED & RESTAURANT FOODS

American Heart Association | American Stroke Association

life is why
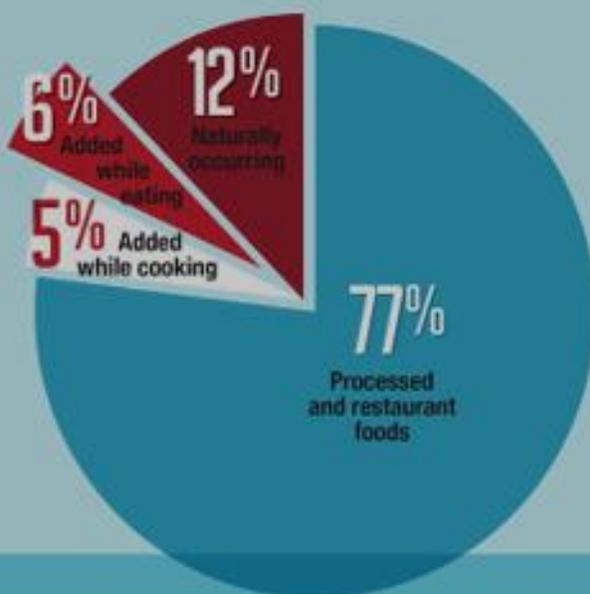
ON AVERAGE, AMERICANS EAT MORE THAN 3,400 MG OF SODIUM DAILY

>3,400 MG

97% DO NOT KNOW OR UNDERESTIMATE THEIR SODIUM INTAKE.

AMERICANS ESTIMATE THEIR SODIUM INTAKE PER DAY AT:

AVERAGE INTAKE

% OF PEOPLE

35%
30%
25%
20%
15%
10%
5%
0%

do not know | 500mg | 1000mg | 1500mg | 2000mg | 2500mg | 3000mg | 3500mg | 4000mg

AMERICANS' SODIUM INTAKE COMES FROM:*

12% Naturally occurring

6% Added while eating

5% Added while cooking

77% Processed and restaurant foods

58% have tried to reduce the amount of sodium in their diet.

57% want more choice or control over the sodium content in their food.

56% think the government should play a role in reducing sodium in foods by setting mandatory (31%) or voluntary (25%) limits.

21% incorrectly believe that there are already limits on how much sodium can be added to processed foods.

15% incorrectly believe there are already limits for restaurant foods.

HEART.ORG/SODIUM

Results from an American Heart Association survey of 2,000 U.S. adults in November 2013
*Mattes and Donnelly, J Am Coll Nutr. 1991;10:383-393

©2014, American Heart Association, 6/14DS8236

Field Bindweed (Wild Morning Glory) Convolvulus arvensis

This Class C noxious weed can have a significant impact on everything from agricultural crops to your ornamental flower beds. It is deep-rooted and has the ability to form extensive underground networks. As with any weed (a misplaced plant) it competes for nutrients and moisture with your chosen crop. Left unchecked, it can choke out vegetation by smothering it with its twinning stems. It also is high in alkaloids, potentially causing gut problems in grazing animals. It regenerates by seed, which are very long-lived, and up to 10 feet long underground roots. Long-term management is necessary to maintain control; eradication is very difficult. Integrated management includes hand-pulling, avoiding breaking the underground roots or leaving them on the surface as they will re-root themselves. Likewise, cultivating an area with bindweed will result in spreading the root sections around for re-growth. Covering the area with a non-organic material and then a layer of organic material over the area is helpful or covered with at least 4 inches of heavy organic material, such as mulch, will help smother it. See your pesticide dealer for chemical control.

White Bryony Bryonia alba

Bryony is a vigorous perennial vine resembling Kudzu in its habit-forming dense mats which shade out all vegetation it grows upon. Major destructive potential to native vegetation, forest communities, and urban horticulture. Berries are toxic to humans. Noxious Weed Control Board. This weed is a perennial vine with climbing stems up to 12 feet long with thick, fleshy roots. The seeds will turn black when mature and are especially poisonous, although all parts of the plant are poisonous to humans and livestock. But, unfortunately, not to birds, which is the main way the seeds spread. They will also re-sprout from the root. You will find this growing in numerous environments along the road, in riparian areas and in disturbed soil. If there is no fence or tree to trellis up, it will form a dense, smothering mass. Control is difficult due to deep, thick roots. Digging out the root ball or at least 2/3 of it may effectively kill it. Persistence and continual removal will help manage it. See your local pesticide dealer for chemical support. The impact on wildlife is significant as it overwhelms and smothers native vegetation; in agriculture and landscapes, it invades orchards, fence lines, gardens and ornamental beds, smothering out the intended crop and increasing management costs.

Downy Brome (Cheat Grass) Bromus tectorum

This noxious weed is a winter (and sometimes summer) annual which is reproduced by seeds. Germination takes place in the late summer to fall; overwinter plants will resume growth in the spring. The plants are usually less than a foot tall, but in a good growing condition, they can grow up to 2 feet tall. The plants dry out after producing seeds and can become a serious fire hazard. The seeds are also a nuisance to humans and animals as they can work themselves into our clothing, and the soft tissues of dogs, especially the mouth, ears, and between the toes. It is a common weed on roadsides, pastures, rangeland and places where the soil has been disturbed. Cheatgrass has a significant impact on agriculture as it competes with the desired crop, can support erosion along field edges, and can lead to devastating wildfires. Control includes mechanical removal, tilling, and/or covering with several inches of mulch. Chemical control for large areas can be obtained through your pesticide dealer.

Scotch Broom Cytisus scoparius

Also called gorse in Scotland, as in "on the 11th hole, his ball ended up in a gorse bush." It is an aggressive, noxious weed class B, woody shrub that can grow up to 10 feet tall. It spreads by seed, which can remain viable in the soil for years. Unless controlled, it can quickly become a widespread problem, causing toxicity to livestock, and humans. Pollen is a common allergen, causing sneezing and asthma. It can be found in forests, woodlots, pasture, along roadsides, and really any uncultivated soil. It can be managed by hand-pulling; digging can also help, but care must be taken as you may bring viable seeds to the surface, where they will sprout. There are a variety of chemicals that can help control this out of control weed. Scotch bloom competes with native and beneficial plants, causing loss of grassland and open forest glades.

In researching this shrub, I found numerous garden centers that sell these plants as ornamentals! Let's not do that, plus property owners in Washington State are legally responsible for managing this noxious weed!

HAPPY GARDENING!

Your WSU Garfield County

The Master Gardeners partnered with Garfield County Public Health's "Farm to School, "coordinator Jessica Nelson took a break for the holidays but since the new year they have been meeting again with the Pomeroy Elementary School 3rd Graders regularly for gardening class. The kids have been learning the parts of the plant and started planting things to be grown in our grow cart. They have taste tested different foods and learned to read a nutrition bar on the foods they consume so that they can try to make healthier choices.

4-H AND FFA HAPPENINGS

March

1st - Spokane Jr. Livestock Show Entries **OPEN**

1st - **FFA** Local Leadership Contest

4th - **FFA** Ag. Mechanics @ Palouse

7th - **4-H**/**FFA** WSU/U of I Beef Field Day @ Nez Perce Co. Fairgrounds

9th - **FFA** Alumni Meeting

10th - **FFA** Sub-District Leadership Contests

14th - **4-H**/**FFA** WSU/U of I Swine Field Day @ Asotin Co. Fairgrounds

21st - Steer Hoof Trimming Day @ Garfield Co. Fairgrounds.

21st - **4-H**/ **FFA** WSU/U of I Sheep& Goat Field Day @ University of Idaho

25th - **FFA** District Leadership Contests @ Asotin High School

27th - **FFA** State Ag. Mechanics Contest @ Perry Tech - Yakima

28th & 29th - Confluence Classic (Clinic & Jackpot Show) - Asotin County Fairgrounds

April

1st - Spokane Jr. Livestock Show Entries **CLOSE**

4th - Garfield County Spring Preview Jackpot

14th - **4-H** Bi County **4-H** Camp Registration OPENS

18th - **FFA** State Agri Science - Yakima

24th - **4-H**/ **FFA** Livestock Judging @ The Asotin County Fair

28th - Spokane Jr. Livestock Show through May 3rd

2026 BI COUNTY 4H CAMP ANNOUNCEMENT

The 2026 Bi-County 4-H Camp is set for June 15-19 at Camp Wooten. We're eager to bring our youth another week filled with growth, fun, and lasting friendships. Registration opens April 14th

Parent volunteers are needed to help make this year a success. Cabin parents and daytime volunteers are key in creating a caring and positive space for campers, and we appreciate everyone who can lend a hand.

Please reach out to Siera Hall at the Garfield County Extension Office if you are interested!
siera.hall@wsu.edu

Annual Spring Farming Days
April 11-12, 2026

- Food will be available to purchase on Saturday and Sunday, Lunch only, from 11:30 am to 1:00 pm in the Community Building.

- Some rock picking has been done and moisture has been good this winter, which hopefully means a better crop this year.

- Camping sites are available by calling 509-843-3701

GARFIELD COUNTY

SPRING

PREVIEW JACKPOT

4 APR

BEEF | SWINE | GOATS | LAMBS

GARFIELD COUNTY FAIRGROUNDS
APRIL 4, 2026

REGISTER AT SHOWMAN.APP

BEEF | JANA KOLLER   SWINE | BECKY TETRICK   GOATS & LAMBS | MAURI KNOTT

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Did you know what causes us to sleep?

The answer may lie not only in our brains, but in their complex interplay with the micro-organisms spawned in our intestines. New research from Washington State University suggests a new paradigm in understanding sleep, demonstrating that a substance in the mesh-like walls of bacteria, known as peptidoglycan, is naturally present in the brains of mice and closely aligned with the sleep cycle. Those findings serve to update a broader hypothesis that has been in development at WSU for years — proposing that sleep arises from communication between the body's sleep regulatory systems and the multitude of microbes living inside us. "This added a new dimension to what we already know," said Erika English, a PhD candidate at WSU and lead author on two recently published scientific papers introducing the findings. This view of sleep as arising from that "holobiont condition" joins a growing body of evidence suggesting that our gut microbiomes play an important role in cognition, appetite, sex drive and other activity — a view that turns traditional brain-centric models of cognition upside-down and has implications for our understanding of evolution and free will, as well as the development of future treatments for sleep disorders.

PhD candidate Erika English is working on research that supports a theory that our sleep is regulated in part by the micro-organisms produced in the intestines (Photo by Cori Kogan/WSU Spokane).

The recent findings regarding peptidoglycan, or PG, lend weight to that hypothesis and point to a possible regulatory role for bacterial cell wall products in sleep. PG is known to promote sleep when injected in animals, but until recently, the conventional view held that it did not naturally migrate to the brain.

English found that PG, along with its receptor molecules involved in PG signaling and communication, was present in different locations within the brain, at levels that changed with the time of day and sleep deprivation. The findings were reported in July in Frontiers in Neuroscience; longtime WSU sleep researcher and Regents Professor James Krueger co-authored the paper. English is also lead author of a recent paper with Krueger in the journal Sleep Medicine Reviews that proposes the "holobiont condition" hypothesis of sleep. That paper combines two prevailing views. One posits that sleep is regulated by the brain and neurological systems. Another focuses on "local sleep," which frames slumber as the result of an accumulation of sleep-like states among small cellular networks throughout the body. Such sleep-like states have been observed among cells in vitro, known as the "sleep in a dish" model. As these smaller pockets of sleep accumulate, like lights going off in a house, the body tips from wakefulness toward sleep. The new hypothesis merges those theories, proposing that sleep results from the interplay between the body and its resident micro-organisms — two autonomous systems that interact and overlap. "It's not one or the other, it's both. They have to work together," English said. "Sleep really is a process. It happens at many different speeds for different levels of cellular and tissue organization and it comes about because of extensive coordination." Links between the microbiome and behavior are emerging on several fronts, indicating that micro-organisms formed in the gut play an important role in cognition and fundamental human behaviors.

For the Rest of the article follow the following link: WSU INSIDER|September 24, 2025; Key to the riddle of sleep may be linked to bacteria, By Shawn Vastal

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Helping You Put Knowledge To Work