

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

AG NEWS



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Half-yak 130 awaits testing as part of a research effort to reduce bovine high-mountain disease in Wyoming. See page 6.



College of Agriculture
and Natural Resources



Dean Frank Galey

“Far and away the best prize that life has to offer is the chance to work hard at work worth doing.”

Theodore Roosevelt

Dear Friends and Colleagues,

The college has filled three key positions since the last issue of *Ag News*.

If you call the Wyoming State Veterinary Diagnostic Laboratory, you might be connected to our newest faculty member and parasitology section head, Assistant Professor **Berit Bangoura**. Bangoura comes to Wyoming from Leipzig University in Germany, where she was a member of the Faculty of Veterinary Medicine and a Diplomate of the European Veterinary Parasitology College. She assumes responsibility for the parasitology laboratory, which includes the trichomoniasis testing program, and identification of other internal and external animal parasites. She will also research methods to diagnose and eliminate coccidia – a single-celled parasite that can infect the intestinal tract of many animal species.

Students this fall will see meat marketing internship opportunities, a UW Branded Meats program on campus, and a revitalized meat judging program headed by **Sierra Jepsen**. Jepsen joined the Department of Animal Science in July and is a recent graduate from The Ohio State University in agribusiness and applied economics. Her background includes internships with AgriBeef’s Washington beef packing plant, the Certified Angus Beef organization, and The Ohio State University Meat Lab. This position, as well as the newly created meat lab student internships, was funded by income from the Y Cross Ranch endowment.

Assistant Professor **Whit Stewart** joined the animal sciences faculty in July as the UW Extension sheep specialist. Stewart’s background includes an agricultural upbringing in western New York and research experience in Oregon, Texas, New Mexico, and Montana. Stewart served as an extension educator in Gillette early in his career and is excited to return to Wyoming and the University of Wyoming.

The extension sheep specialist position will develop a relevant and impactful extension program in sheep aimed at increasing the sustainability and profitability of this industry. Stewart will also develop a sheep production and management class for our students in addition to his work with producers.

Partially as a result of state and university budget constraints, the college also saw a large number of faculty retirements this past year. With a combined total teaching, research, and outreach experience of 407 years, these 14 individuals will be greatly missed. This *Ag News* issue includes a complete list of our retirees. The college is hoping to get permission to fill a few key faculty vacancies soon.

This issue also highlights the 2017 Outstanding Alumni, Legacy Award, and Research/Outreach Partner of the Year awardees. **Phil Stahlman** has had a stellar career in plant sciences, notably with the Agricultural Research Station in Kansas. **Martin Winchell** credits part of his achievements as a successful business leader in China with his first international trip as an undergraduate at UW.

Kurt “Cub” Feltner, a previous Outstanding Alumni award recipient, is being honored again this year as the college’s Legacy Award winner. Feltner has endowed programs benefiting the Wyoming Agricultural Experiment Station.

The **Wyoming Livestock Roundup** is being honored as the college’s Research/Outreach Partner of the Year. Editor **Dennis Sun** and the entire *Roundup* staff regularly publish articles written by UW Extension educators and faculty members on topics of interest to Wyoming’s agricultural industry. In addition to providing a medium to help the college disseminate scientifically based information on current topics to Wyoming’s citizens, Sun has also served as a member of the college’s advisory board for many years.

Last, but not least, the Vanvig Distinguished Faculty Lifetime Achievement Award is being awarded to **David “Tex” Taylor**. Professor Taylor is a faculty member of our agricultural and applied economics department. Throughout his extraordinary career, Tex has been a leader in providing economic impact information to many state, federal, and local groups. His areas of expertise include economic development and recreation economics. He also serves on the Consensus Revenue Estimating Group for Wyoming. This body is responsible for formulating projections of the main sources of income to the major accounts in the state.

I hope you will join the college during Ag Appreciation Day September 23 to help us honor each of our deserving award recipients at the UW vs. Hawaii football game.

Dean Frank Galey
College of Agriculture and Natural Resources

Researchers discover 'switch' that allows microbe to recognize kin

Wyoming's serene plains and majestic mountains belie what's going on under foot – organisms hunting, killing and generally wreaking havoc among the billions that make their living there.

In some cases, one-celled family members band together for protection and even unite to become true multicellular organisms in order to survive. How they recognize family members and coordinate activities has vexed scientists.

Molecular biologist Daniel Wall and Ph.D. student Pengbo Cao believe they've solved a piece of the mystery and show their results in an article published online last spring in the Proceedings of the National Academy of Sciences (PNAS).

"Self-identity reprogrammed by a single residue switch in a cell surface receptor of a social bacterium" describes a lone amino acid switch they found that can govern how the soil bacterium *Myxococcus xanthus*

recognize their kin. The article is at <http://bit.ly/pnaswall>.

Social Butterflies

Microbes have a bad rap for being socially inept, but actually many of them live quite social lives. They identify close relatives then cooperate with them.

"If they really want to thrive, they need to come together, recognize each other and assemble into multicellular structures to form something that's beyond the ability of the individual," says Cao. "I was pretty amazed how such a small, single-cell microbe could exhibit such sophisticated social behaviors."

M. xanthus cells move on solid surfaces and forage for food. Sensing when the food supply is about to run out, hundreds of thousands aggregate and form what are called multicellular fruiting bodies, which harbor spores highly resistant to environmental stress. They preserve the DNA

information and regenerate when conditions are ideal again.

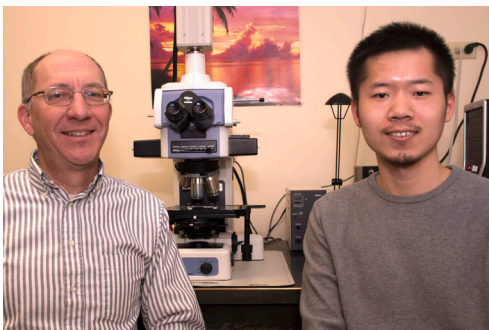
Wall notes that *M. xanthus* social behaviors can be compared to those of other animals – swarms of insects, schools of fish, flocks of birds, herds of animals, all of which coordinate their movements with kin.

During development, these animals start as a single cell, a fertilized egg, and clonally divide to become a multicellular organism. But *M. xanthus* provides a developmental contrast. At the single cell level, he says, they form social groups that can further assemble to create multicellular organisms with coordinated activities and undergo cellular differentiation.

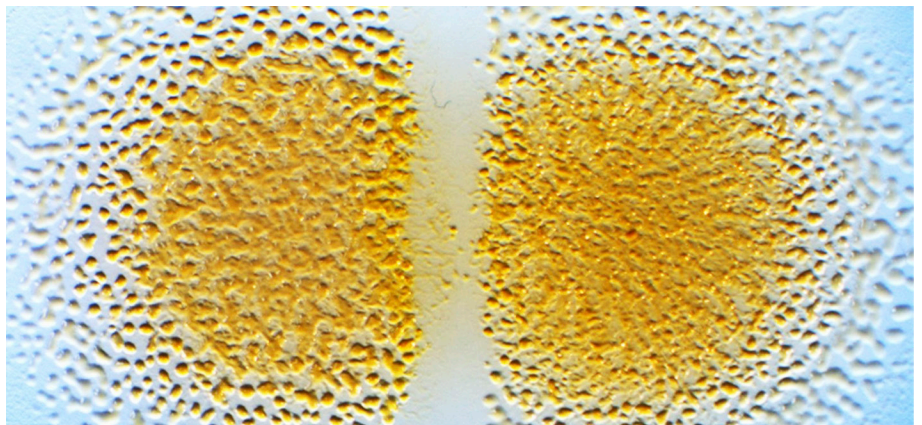
"They are a true multicellular organism, but they built it by an aggregation strategy," says Wall.

Metropolitan Underground

Myxobacteria recognize other individuals that are genetically identical or related all while living in a



Associate Professor Daniel Wall and Ph.D. student Pengbo Cao found that certain single-cell soil microbes recognize their kin, allowing them to unite and cooperate for protection and form multicellular structures.



Two otherwise identical colonies that express different toxins moving toward each other. The toxins cause a barrier between the two colonies (due to cell death), making them unable to merge. (Photo: Christopher Vassallo)

very cosmopolitan environment, notes Wall. Soil, for example, can contain tens of thousands of different species and thousands more subspecies. Wall and Cao wanted to see how family members are recognized.

Efforts built on an earlier discovery by Wall and colleagues who found a particular cell receptor called TraA facilitated recognition among *M. xanthus* cells and allowed them to come together and exchange proteins and other components, a process called outer membrane exchange.

Cao notes different strains have different TraA sequences.

“The TraA receptors ensure when cells come in contact, the sharing of cellular resources only occurs with close relatives that have identical or very similar TraA receptors,” says Cao.

Wall and Cao asked if different TraA receptors allow cells to selectively bind one another.

So, they put different receptors labeled with different color markers into the same parent strain and showed that cells with different receptors formed distinct kin groups.

They then questioned how one receptor could create such diversity in recognition among natural populations so, using molecular scalpels and wrenches, they assembled parts of different TraA receptors and tested if cell recognition could be reprogrammed.

“Cao took the simplest case of two receptors very similar in sequence that only had 11 amino acid differences yet did not recognize each other,” says Wall.

Cao made a series of chimeras, using half of one receptor and half of another, and observed what the bacteria recognized.

They found a single amino acid within the receptor plays an important role in the recognition.

“This was a surprising result,” says Wall. “That changing one amino acid had such a dramatic impact on specificity.”

By changing this residue they even engineered a TraA receptor with unique specificity that only recognized itself.

Avoid Unpleasant Relatives

They hypothesize the malleability of TraA has allowed it to evolve and create social barriers between myxobacterial populations which, in turn, avoids nasty interactions with exploitive relatives.

Recognition is an important process because misrecognition of a neighboring cell could be lethal. Hundreds of different proteins are transferred during outer membrane exchange. Included in the mix are toxins and, if the other cell is not a true clonemate or self, they won't have the antidote and will die (see related story). Wall and Cao speculate such adverse interactions may drive and maintain diversification of TraA sequences in nature.

M. xanthus' predatory nature has drawn agricultural interest.

“They kill and consume other bacteria,” says Wall. “That's how they make their living, by eating their microbial neighbors.”

Scientists want to use that predatory behavior for biocontrol.

“Myxobacteria themselves do not harm plants, but they can kill pathogens of crops,” says Wall. “*M. xanthus*, along with other types of microbes, are organisms of interest to use as a natural way to control and protect crops from disease.”

After the switch is flipped, bacteria have a ‘just in case’ mechanism to confirm identities

Those people at Google think they're sooooo smart. So, too, the Apple and Microsoft wunderkinds.

Their software (and many others) use two-factor authentication in the digital world to verify identity, but they're a little behind. More down to earth, a one-celled soil bacterium beat them to it by who-knows-how-many millions of years.

Ph.D. student Chris Vassallo in molecular biologist Dan Wall's laboratory found the bacterium *Myxococcus xanthus* performs its equivalent of a secret handshake after an initial meet-and-greet encounter in its social world. The second-level of verification is important. They die if not recognized.

Earlier research in Wall's lab (see related story) found these bacteria recognize kin through the cell surface receptor called TraA and transfer cellular goods to one another when touching via a process the lab calls outer membrane exchange (OME). This current research, published

recently in the open-access journal *eLife*, is about the cargo that's exchanged.

M. xanthus social lifestyle requires them to cooperate with their kin or close family members.

"It's very important these cells know who they are cooperating with," says Vassallo, from Cheyenne. "They don't want to give beneficial treatment to another cell they are competing with if it's not their self. One way they do this is through toxin exchange."

Swap Potent Potions

The cells exchange potentially toxic proteins during OME. The process takes a couple minutes.

"If their identities don't match, they'll kill each other with the toxins," said Vassallo.

The toxic cocktail of proteins moves from cell to cell, chewing up DNA or RNA if the cell is not immune. Vassallo says these bacteria don't die immediately. Although sick, they are able to infect other cells, similar to humans with a transmittable disease.

Wall's laboratory found the bacteria use a receptor that is unique to *M. xanthus*. In the wild, underfoot outdoors, there are hundreds of different recognition receptors within the myxobacteria group.

Using the TraA receptor for identity verification is not enough, though.

"We think this offers a fair amount of specificity, but by no means does this provide the level of specificity that would be needed in the environment," Wall says.

A few grams of soil might contain a hundred distinct *M. xanthus* social



Chris Vassallo

groups, all living together but not necessarily wanting to cooperate with one another, says Wall.

"So what Chris discovered is this second layer of specificity," notes Wall. "The first layer is, 'Do you have a compatible TraA receptor?' If you do, you exchange components. Then the next layer is, 'Do you have immunity to the collection of toxins I'm going to give you using this exchange process?'"

Not all Death and Destruction

The one-celled creatures are remarkably adept. The bacterial decimation, where kin kill non-kin as packs of cells converge, results in a kill zone (see photo page 3). However, not all exchanges result in death and destruction. Vassallo found in previous research that healthy bacteria repair damaged kin. He designed an experiment where cells had defective membranes and left on their own would die. But if mixed with healthy kin, the clonemates would give them healthy

material, and the sick cells became rejuvenated.

Wall's work, part of a \$1.2 million grant from the National Institutes of Health, is basic research, an emphasis on better understanding of and expanding knowledge about the world, and in his case how cells recognize and interact with one another.

His work addresses molecular biology mysteries. One element is the greenbeard gene. Scientists once thought the concept was hypothetical, Walls says. Such a gene could identify others with the same gene and confer something beneficial, increasing the recipient's fitness for survival.

Scientists have been putting forth various greenbeard candidates.

Wall offers the TraA receptor. It allows a cell to confer beneficial behavior by exchanging cellular components with another cell with the exact same gene.

"We think we have the best example of a greenbeard," he notes.

The other research area addresses how multicellular animals and plants came into existence.

The evolutionary transition from single cell to multi-cell life is apparently very difficult, he says. The event is thought to have occurred only once for animals and perhaps twice for plants.

"In the microscopic world, it might have happened separately a dozen times," Wall says. "In the case of myxobacteria, they appear to have made this transition to multi-cellularity, a fairly primitive transition that's based on an aggregation strategy."

Fourteen Half-Yaks Seek Private Tibet,

Can high-altitude genetics stem high-dollar cattle losses?

June 1, 2017: Two bovines escape from a pasture. They're rounded up and secured in a pen. It's not the first time. Escapees A130 and A330 are half cow, half yak, bred as part of a study on brisket disease and altitude adaptation in cattle.

The short of it is at high altitudes, some cattle get sick and some die. The higher the altitude and longer they stay – on summer pastures or ranches above 6,000 feet, for example – the worse the problem. Oxygen deficiency causes the arterioles, the tiniest arteries in the lung, to constrict, which makes the heart's right ventricle work harder. A cow with brisket disease, also known as bovine high-mountain disease, may develop swelling and fluid buildup (edema), especially in the lower chest area, or brisket.

Coming from molecular biology and genomics is Mark Stayton, who retired as an associate dean in the College of Agriculture and Natural Resources in July. His approach to brisket disease is to isolate the genes responsible, develop a quick blood test to tell if cows are susceptible, and start a new line of cattle using interspecies breeding.

The plan at the Laramie Research and Extension Center (LREC) is to selectively breed first-generation (F1) cattle-yak crosses to cattle for multiple generations until the cows are back to being almost entirely cows again – but with some of the altitude resistance that allows domestic yaks to survive at 14,800 feet on the Tibetan Plateau.

Travis Smith, livestock manager at the Laramie Research and Extension Center, says after securing the errant half-yaks in a holding pen, “I’ve never seen anything like it.

They’re wild one minute and coming up to you, nuzzling your leg and nipping at your horse’s tail the next.”

The nine heifers and five bulls in the study represent the elite 21 percent born a year ago after 66 of the center’s mixed Hereford-Angus cows were artificially inseminated with yak semen.

Enter Talbotts’ Brae Arden Herefords

April 7, 2017: Veterinarian Timothy Holt of Colorado State University arrives at the LREC beef



Area rancher Janet Talbott says weather takes a harder toll on altitude-stressed cattle.

unit at 7:45 a.m. with a field team of four vet students. Next to the squeeze chute in the large metal building, they set up tables, a series of brightly colored disinfectants, oscilloscope, and supplies for pulmonary arterial pressure (PAP) testing.

Cattle growers for years have selected for altitude-resistant animals using PAP testing. A low PAP score, the average of the systolic and diastolic blood pressures, indicates an animal is pumping blood through the lungs easily.

When Janet Talbott and her son, Jay, learned Holt would be in town for the yaks, they arranged to bring in five of their Brae Arden Herefords. The Talbott ranch, about seven miles from the LREC, lies at more than 7,200 feet. Jay Talbott once bought a top sire in Nebraska. After 60 days of acclimation, he had it PAP tested and had to send it back.

In places like Nebraska and Texas, the trend is for bigger, blockier animals, improvements that can be costly in the “Brisket Disease Belt” of Colorado and Wyoming. Holt has reported calf crop losses as high as 65 percent in susceptible cattle and says losses of 25 percent are not uncommon.

The Brae Arden Herefords originated from a train car load Janet Talbott’s father bought at the National Western Stock Show in Denver in the 1930s. The family’s breeding program has never strayed from the



Mountain Views

original line, which has kept the herd genetically closed for almost 90 years.

As the Hereford bulls fill the chute, Talbott comments, “They’re so docile, you practically have to twist their tails to get them to move.”

The motor for the hydraulic head chute churns, the overhead line lets out an intermittent chu, and the radio in the office window plays classic vinyl.

The two panels of the head catch close on the first Hereford. Grandson Jaymes Talbott halters him and pulls the lead rope around the squeeze chute until the cow’s right horn touches the metal panel. This awkward head grab, or “mugging,” exposes the target of Holt’s needle.

The jab into the vein is strong and sure. Holt feeds tubing through the needle hub into the right ventricle and up the pulmonary artery, which leads from heart to lung. The transducer at the tip converts the pulmonary blood pressure to an electrical current. At 7,200 feet, they’re looking for a PAP measurement of 40 or less. All present turn to the oscilloscope screen.

The Hereford’s score is 36.

Talbott responds matter-of-factly, “I’d be surprised if it were any different.”

The head catch is released. Holt calls, “Coming out the chute!” and the bull runs through the open doorway.

Next Up, Yaks

Holt: “OK Kelly, you’ve got the squeeze. Belle, sticking. Amanda, passing.”



Jaymes Talbott holds the head as Mark Stayton collects a blood sample for DNA testing. Wearing his signature Broncos cap is Tim Holt from the CSU Veterinary Teaching Hospital. Holt has performed more the 500,000 PAP tests in the Rocky Mountain West, Ethiopia, India, and Peru.

Holt stands close. Jaymes Talbott stays on as mugger. Belle Belden jabs the jugular vein, and Stayton, wearing sky-blue nitrile gloves, extends a vial under the thin, red stream.

The blood of the control cows and yak-crosses in this and future generations will be used to sequence the DNA and segregate the genes for resistance.

Amanda Blassingame starts the arterial line. Holt calls out the first bovine (cow) score: 37.

Haley McKee, a UW molecular biology student, records the PAP for each animal, along with the systolic and diastolic pressures.

There are no docile yaks. As A130, a steer, approaches the tailgate of the squeeze chute, he spots a gap and runs. In the head squeeze, Yak Z341

pulls and shakes vehemently, finally dropping to its knees. Holt pushes, Talbott pulls, and Kelly Kolar at the chute lever adjusts until at last, mugger, headgate, and yak align. McKee writes “problem child!” after the score of 35.

“So far, so low,” calls Holt.

Bovine X207 proves to be the outlier at 66.

Yak A206, another escapee, comes up again. PAP score: 39.

“That’s a regular random cow. No love for that one,” says Holt to the next cow through. PAP score: 36.

Yak A130, one of three that got away, is last. After following the fences to the corral, he is back in the chute, nervous and wary.

In the end, the averages are Bovines 42: Yaks 34.



Half-yaks look different from cows. Their hair is shaggy, their tails are more like a horse's, and their faces are longer.

Stayton Widens the Score

August 2, 2017: A two-ton UW truck creeps over rocks and washboard earth, hauling a 1,600-gallon plastic tank to the top of a mountain road. It's a test run. Smith expects to make this trip with 12,800 pounds of water and 3,200 pounds of hay (two round bales) to 10,000 feet every two or three days until October.

Stayton wants to expose the cows and F1 yak-crosses, now 14 to 16 months old, to what he calls super-high altitude. He wants to really stress them. In the fall, the CSU livestock field unit will perform PAP testing on the mountain. The hypothesis is the stress will hit the bovines hard, while the yaks live in ease.

In the end, however, altitude resistance is only useful to Wyoming ranchers if the new animals also express the traits necessary for efficient beef production. Fortunately, the first yak-bovine crosses show potential as commercial stock.

To keep the cows and yak-crosses in, Smith and crew will erect rugged 6-foot-high fence panels, the kind used to contain rough stock – rodeo broncs and bulls. At the beef unit, Smith has watched yaks walk up to a wire fence, stand flat-footed, and jump over. He returns the yaks, only to have them escape again before he can unsaddle his horse.

Yaks, *Bos grunniens*, and cattle, *Bos taurus*, have been crossed in Tibet for 3,000 years. According to Stayton, their protein sequences are, on average, 99.5 percent identical. It is within that .5 percent difference that things get interesting.



A variable rate sprinkler has Heart Mountain as a backdrop.

POWELL

An annual attraction

Those attending the Powell Research and Extension Center field day July 13 toured research plots on the 220-acre facility, asked UW scientists questions, and ended the day with an outdoor barbecue prepared by Warrie Means, UW Extension meats specialist.



FIELD DAYS 2017



Andi Pierson explains research plots during the tour of the farm.



Finishing plant sciences Ph.D. student Abdelaziz Nilahyane, right, and finishing master's student Saugat Baskota.



Extension forage specialist Anowar Islam at the research poster session during the field day.

Sheridan Research and Extension Center (ShREC) Field Day July 7, 2017, included tours of horticultural and agricultural sites at the 40-acre Adams Ranch, with short talks on weeds, wine grapes, invasives, and habitat restoration. In 2017 ShREC supported 11 undergraduate interns, many of whom worked with staff to host the event. Lunch was served under a tent on the hill with Big Horn mountain views.

UW President Laurie Nichols with College of Agriculture and Natural Resources Dean Frank Galey and Wyoming Agricultural Experiment Station Director Bret Hess.



Field day guest Roy Powers inspects bromegrass with Johnson County Extension educator Blaine Horn.

Participants include farmers, ranchers, students, educators, and representatives from agribusiness, banks, local and state government, and nonprofits.

SHERIDAN



The research of Ph.D. student Dennis Ashilenje shows bromegrass and legume mixtures boost productivity and quality in irrigated fields.

Outstanding Alumni Award

UW helped grow outstanding alumnus' 45-year weed science career

The University of Wyoming can credit dairy cows for two of its more prolific weed science experts.

Outstanding Alumni Award recipient Phil Stahlman didn't want any part of his family's northwest Oklahoma dairy after high school. His two older brothers were more interested, and Stahlman was more enthusiastic about crops. A little over 400 miles away in northern Colorado, soon-to-be lifelong friend and professional peer Steve Miller looked at HIS family's dairy farm and thought the same thing. They would meet as fellow weed science graduate students at North Dakota State University and 13 years later, Miller would be Stahlman's Ph.D. adviser at UW.

Stahlman retired this February after working his first three years at North Dakota State University at Minot, then two years at Hesston, Kansas, for Kansas State University, then 40 years at KSU's Agricultural Research Center at Hays, Kansas.

One nominator for the award noted Stahlman's research and his ability to communicate those findings to a lay and scientific audience. His work has been recognized nationally and internationally.



Phil Stahlman

"There can be no finer tribute to a quality education – and the institution that provides it – than the graduate who succeeds," writes Kenyon Griffith, a retired UW faculty member and administrator from 1970-2004. "Phil Stahlman has succeeded."

Moving from Master's to Ph.D.

Stahlman walked a slower path to his Ph.D. than his friend, Miller. He worked for NDSU those three years before joining KSU, and 10 more before returning to school for his Ph.D.

"I realized in my research position I would be better off with a Ph.D.," he recalls. "Not that I had been held back, but I felt the need to go ahead and go back to school. That proved to be a very good decision."

He and his wife, Linda, had sons in the first and fourth grades at Hays. A difficult decision he says, to uproot his family and move to Laramie, but the couple had been discussing the change for some time.

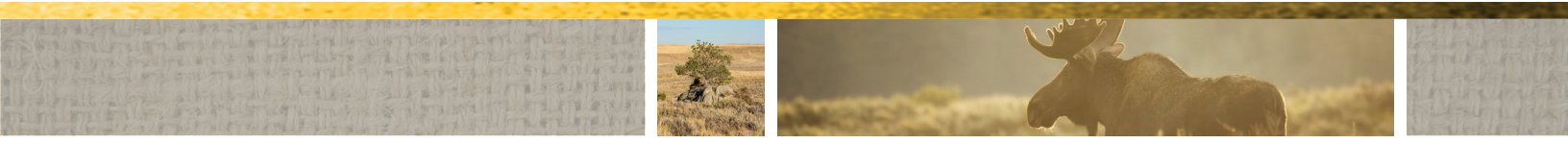
"We decided collectively we would make that move. It was an investment in our family and my career," he says.

They celebrated their 48th wedding anniversary earlier this year and have one granddaughter and another grandchild expected in September.

Kurt Feltner, a UW alumnus (see related story), was director of KSU research centers at the time.

"He showed so much promise I encouraged him to do a Ph.D.," says Feltner. "I couldn't be more pleased. The guy made real headlines over the years in areas of herbicide-resistant weeds."

Stahlman was vehement about not pursuing his Ph.D. from KSU.



“I saw the value of getting as much breadth of experience as a person can,” he says. “I very much wanted to go to another institution for the Ph.D.”

Stahlman and Miller kept up their friendship, Stahlman earning his master’s degree and Miller his Ph.D. They also collaborated on projects. That friendship and working proved a plus. He’d been a researcher 13 years and didn’t need to learn the how, he says, and was able to operate a little more independently than most graduate students.

“That doesn’t mean I had free reign.”

KSU had granted Stahlman a sabbatical to get his Ph.D. – his job would be waiting upon his return. That proved a double-edge sword, he says, because he kept a skeleton research program at KSU while also conducting research for his UW dissertation.

Weed Management Strategies Focus

Research project by research project, he built a career of finding ways to improve current or find new weed management strategies. Basic and applied research examined herbicide-resistant weeds, jointed goatgrass, corn herbicides, grain sorghum herbicides, weed control in soybeans, sunflowers, and wheat, and recropping studies to find ways for western Kansas farmers to manage their land after drought or other event destroy their winter wheat crop.

Griffith notes Stahlman’s research creativity by investigating alternatives to herbicides, which would result in a U.S. patent. He collaborated with weed scientists in Colorado, Nebraska, and Wyoming to establish long-term field studies to see if using only glyphosate multiple times annually worked for weed control. The research confirmed the risks of continual glyphosate use and the benefits of a diverse herbicide program.

In 2007, his graduate student confirmed the first cases of glyphosate resistance in kochia. Another graduate student confirmed multiple resistance in kochia to glyphosate and dicamba herbicides. From 2012 to his retirement, Stahlman documented the distribution of glyphosate resistant Palmer amaranth in Kansas and determined in greenhouse trials that numerous populations have evolved resistance to as many as five herbicide modes of action.

Hasn’t Locked Office Door

Stahlman retired in February but still goes to his office to complete projects. He’s a fan of researchers living where they are investigating issues.

“I think it’s quite important,” he says. “You have faculty in those areas that are able to concentrate on the problems of local growers. They become part of the community, and I think growers feel a little bit more connected to them than with researchers on the main campus.”

He has bad news and (mostly) good news for agriculture.

The good – The future is bright for students thinking about a weed science career. Those opportunities are caused by the bad: there are fewer and fewer herbicides that provide growers broad and easy weed management.

Weeds will always be around, and weed control is essential to get as much production as possible out of a crop, whether crops or range, says Stahlman.

“We unfortunately found in recent years if we don’t do things right or we get too lulled into doing the same thing, that weeds will evolve and develop resistance to herbicides we are using or just change their biology. They are able to evolve with production practices,” he notes.

That topic has taken up much of his last 10 years.

Glyphosate was used so much and was so effective, producers became reliant on the chemical.

“We overused and misused it and once you do, resistance develops,” he says. “We are confronted with finding alternative practices and in many cases the alternatives may not be as effective as glyphosate and more costly.”

The alternatives also don’t have the same broad spectrum or effectiveness. That’s a dilemma for producers who face rising production costs, more complex weed control, and more emphasis on management strategies.

“Students face big challenges but also tremendous opportunities,” he says. “There will be new breakthroughs, new developments. I don’t have the crystal ball that allows me to tell you what’s going to be, but if you look back over decades of development, we have come a long way in the last 75 years. I think it’s probably a given there will be breakthroughs. It would be exciting to be a part of that.”

Outstanding Alumni Award Managing director for China mixes UW practicality with international experience

Schneider, a \$4 billion firm headquartered in Green Bay, Wisconsin, offers clients “sure, smart access to the expertise and modes to keep your mainland China cargo supply chain running without a hitch.”

Making good on the marketing is College of Agriculture and Natural Resources graduate Martin Winchell, who heads Schneider Logistics (Tianjin) Co. Ltd, one of the largest wholly-owned foreign transportation and logistics firms in China.

The company serves domestic clients and multinational firms such as IKEA, Wal-Mart, and Chevron.

Winchell says a professor told him, “You have to develop something better than what graduates from other universities offer.”

“I was lucky to fall into a niche where I used agricultural and applied economics to learn about transportation,” says Winchell.

Enters Uncharted Territory

Steven Matheys, executive vice president and chief administrative officer for Schneider National, Inc., points to Winchell’s ability to build relationships from the warehouse floor to the highest positions in China’s Ministry of Transportation.

“He has been a catalyst for change in China’s rapidly evolving transportation and logistics sector,” says Matheys.

Roger Coupal, professor and former department head for agricultural and applied economics, says when



Martin Winchell

Winchell moved to China in 2005, it was uncharted territory for the industry.

“He used his keen business acumen and thoughtful intercultural awareness to establish Schneider Logistics (Tianjin) as the transportation and logistics industry leader in China.”

Under Winchell’s direction, Schneider developed ground, ocean, and air operations and a logistics network that includes port logistics, supply chain management, and energy transportation services.

“Martin has helped implement innovation in a transportation market yearning for efficiencies of scale,” says Matheys. “His insight, flexibility,

and relentless perseverance are helping mold China’s transportation and logistics model for the future.”

Becomes a Useful Chinese Hand

After graduating from high school in Gering, Nebraska, Winchell earned a bachelor’s degree from the College of Agriculture and Natural Resources in 1995.

“I think there’s a good balance that comes with being UW-practical,” says Winchell. “Mix that with complex international experience, and it gives you a good sense of how to get things done.”

Winchell credits the early direction he received from agricultural and applied economics Professor Ed Bradley, who encouraged him to pursue a study-abroad experience in France.

“I was a small-town kid, and he opened my eyes.”



Winchell, back on the UW campus in May, drinks a tall cup of green tea from Starbucks as he shares views from a now-seasoned perspective.

“In a lot of ways, the longer you live in China, the more complex it becomes. A few colleagues – business execs from other companies who’ve been there 25 years or longer – told me, ‘Now you are finally becoming a useful Chinese hand.’ Once you reach that level of confusion, you have the experience you need to make decisions and find solutions.”

Likewise, Winchell says America’s relationship to China will become more challenging as it becomes stronger. He says in China, there is recognition that in the last 25 to 30 years, U.S. business leaders have been very accommodating of the country’s development.

Now, America has to develop new tools and policies to remain competitive, he says. “We need to trade, and we need our businesses to invest in other countries, but we need to do it in a more fair and balanced way,” he says. “The relationship needs to be reset based on the current China, not the one from 25 years ago.”

Human Relations in Technology’s Next Wave

Winchell is on Day 10 of his U.S. visit, and sleep is in short supply as he addresses situations in China by nightly emails and conference calls.

Schneider has more than 600 full-time and contract employees in China. During Winchell’s visit to the college in 2015, he told agricultural and applied economics

“I think there’s a good balance that comes with being UW-practical. Mix that with complex international experience, and it gives you a good sense of how to get things done.”

Martin Winchell

undergraduate and graduate students, “I need managers who can manage people and inspire them.”

That rings true today, he says.

“While data is important, there is also a shortage of people management skills. Part of that is not being able to relate because we’re dealing with data, with technology, all the time,” he says.

The era of big data is here, says Winchell. It’s time to ask, ‘What do we do with all this information?’

Winchell urges the college and university to train students to process information on a human as well as system level. He asserts that in a future where artificial intelligence and virtual reality are commonplace, students’ need for training in effective human interaction will intensify.

“I’m not a technologist by any stretch, but it’s going to be quite fascinating.”



From 26 operating locations, Schneider delivers to over a thousand locations in more than 300 Chinese cities.

Vanvig Lifetime Distinguished Vanvig award recipient's work untangles Wyoming's economic intricacies

At 6 feet 8 inches, pardon us for saying Tex Taylor throws a rather large shadow across the economic analyses landscapes in the Cowboy State and region.

This year's Andrew Vanvig Lifetime Distinguished Faculty Achievement Award has been a faculty member in the Department of Agricultural and Applied Economics since 1985.

Taylor is the go-to guy for economic analyses of environmental, tourism and recreation, endangered species, and many other issues affecting Wyoming and Wyoming communities, notes Dale Menkhaus, Professor Emeritus in the department, who worked with Taylor for decades.

"His achievements and contributions have gained for him a distinguished reputation, not only in Wyoming, but also in the western region and nationally," says Menkhaus.

Ditto, says Nicole Korfanta, director of the Ruckelshaus Institute in the Haub School of Environment and Natural Resources. Taylor has been a member of the Wyoming Open Spaces Initiative team for years, and his contributions have had substantial impact in Wyoming and beyond, she says.

"Tex is a wonderful colleague – a gentle giant with a great sense of humor," says Korfanta.

About that giant reference – search the web for the Edgar, Montana, 1966 Class C championship basketball team, and a team photo will probably popup. Identifying Taylor, who was a 6-8 junior, isn't hard. Perhaps one of the tallest high school basketball players in Montana was in Class C, the smallest competition classification. Edgar whipped those upstart Stanford Wolves from Helena 59-44, and finished that season with only one loss.



Tex Taylor

Rural Background

Taylor and his two brothers grew up on a farm near Billings; he never considered staying on the farm.

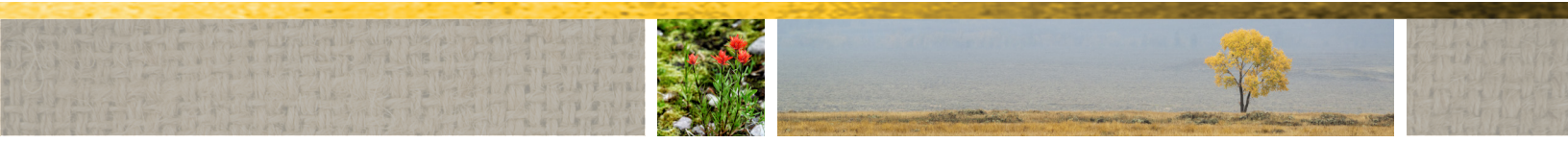
"Not particularly," he says. "It was just too harsh a life. It wasn't a big operation. Dad raised three kids and did fine. But it wasn't the Ponderosa or anything."

He would play basketball at Montana State University, and time came as a junior to pick a major.

Economics. "It seemed as good as any," says Taylor. "There was no great epiphany. Wish I had something deep to say. I just found it fascinating how firms operate and how they related to each other and the macro things of how policies affect the economy."

He earned his bachelor's degree in 1972 and master's in 1973 and entered a short stint in the world of banking in Omaha before returning west.

Gene Lewis, a teammate from the Montana State basketball team, was working in a UW Extension program and called Taylor to ask if he was interested in working on



Faculty Achievement Award

a study in the Big Horn Basin that would last about six months.

“I came down here and basically never left,” quips Taylor, who would earn his Ph.D. at Colorado State University in 1985.

Mentor Appreciation

Chris Bastian, an associate professor in the department, says Taylor was always a patient, kind and generous mentor. Taylor helped Bastian with his dissertation.

Taylor taught the details that need to be considered in pertinent analyses, information not found in textbooks or software manuals, says Bastian.

“It is this kind of mentorship and expertise that sets Tex apart from many so-called experts,” he says.

Applied research, studies that help understand a given issue or question, appeals to Taylor.

“Driving through a community somewhere in Wyoming, I’d always think, ‘What makes this community’s economy work, what drives it, what are the important factors, why is it here?’” says Taylor. “I always found that interesting.”

Taylor spent three years in Teton County as an extension educator and says he came away having learned how to frame things in a clearer, more easily understood and helpful way. He also came away with a wife. He met Rebecca in Jackson. They have two children, who both live in Laramie.

Economic Endeavors

Korfanta says Taylor led documenting the growth and redistribution of Wyoming’s population and how that affects the loss of open spaces Wyoming residents value.

“I know his work has also provided a template for others around the West to understand the economics of open spaces,” she says.

Taylor is a long-time member of the Consensus Revenue Estimating Group, which tries to estimate near-future revenues received by Wyoming’s government.

It’s a cocktail of annual estimates in October to assist in the governor’s preliminary budget, with a revision in January. Mineral prices, natural gas prices, the stock market all come into play.

“It’s a very difficult thing to predict,” Taylor says.

Still, he likes looking at the economics of specific topics with broad influences. Those include public lands and open space issues, a recent economic impact to Wyoming’s economy from a potential listing of the sage-grouse, and examining the H-2A agricultural guestworker program and the sheep industry. The program allows agricultural employers to hire foreign nationals to fill temporary jobs.

The reports have caused a greater understanding of complex interactions.

“The economist does the analysis and that’s wonderful and great, but to be useful, and where I get satisfaction, is when people actually use it,” says Taylor.

The Andrew Vanvig Lifetime Distinguished Faculty Achievement Award

Andrew Vanvig served as head of the then-Department of Agricultural Economics for 25 years and was a faculty member for 35.

Vanvig created the Andrew Vanvig Lifetime Distinguished Faculty Achievement Award in 2010 to honor a senior faculty member in the college for lifetime accomplishments in teaching, scholarship/creative activity, and service.

Professors in the college who have a minimum of 15 years of service are eligible.

Legacy Award

Agricultural Experiment Stations always important to Legacy Award recipient

Pinedale native Kurt Feltner's career may have passed through Arizona, Montana, New Hampshire, and Kansas, but his fondness remains for Wyoming and the institution to which he devoted most of his career – the Agricultural Experiment Station.

The College of Agriculture and Natural Resources alumnus earlier provided for an annual young researcher award and has now established an endowment in honor of his late wife, Lynn, to create an award for the best student paper in *Reflections*, the research magazine of the college published annually by the Wyoming Agricultural Experiment Station (WAES).

Kurt "Cub" Feltner worked with Pepper Jo Six in the UW Foundation to create the endowment. Lynn died 10 years ago from Alzheimer's. Feltner met Lynn in Louisiana while he was in the U.S. Air Force during the Korean War. "Three months later, we were married," he notes. They celebrated 58 years.



Kurt "Cub" Feltner

"I said to Pepper I'd like to do something to honor my wife because she was a willing partner my entire professional life, and Pepper came up with the idea of the Lynn Feltner Student Paper Award," he says. "Undergraduates and graduate students play a big role in research at UW but are kind of unheralded, just like my wife was unheralded although a full partner in everything I did."

Feltner presented the first award to Jessica Windh during the WAES research award reception in February. Windh, of Reedley, California, is an undergraduate student in rangeland ecology and watershed management.

WAES director Bret Hess expressed his appreciation.

"Cub is one of the most gracious and generous persons I have had the privilege to know," says Hess.

"Recognizing Lynn's unwavering support in this manner is a testament to his commitment to honor those who truly deserve recognition."

Feltner received his bachelor's and master's degrees at UW and earned his Ph.D. from the University of Arizona in 1963.

He worked at UW after his Ph.D., then joined Kansas State University as an associate professor of agronomy. He then accepted the position of head of the plant and soil science division position at Montana State University. Nine years later, he became dean and

Why 'Cub'?

Kurt Feltner is known to many as Cub. Feltner relates his father had a World War I buddy named Cubby Culberston. The name eventually shortened to Cub, and he inherited the nickname.

Agricultural Experiment Station origins

The Hatch Act of 1887 created agricultural experiment stations at land-grant universities in the 50 states, the District of Columbia, and in other U.S. areas (for example, Guam).

The Wyoming Agricultural Experiment Station was created in 1891, and is housed in the College of Agriculture and Natural Resources. The station directs activities at research and extension centers in Laramie, Powell, Sheridan, and near Lingle.

experiment station director at the University of New Hampshire.

He returned to KSU in 1983 to become director of the KSU Agricultural Experiment Station and finished his career as executive director of the North Central Association of Agricultural Experiment Station Directors, retiring in 1994.

“Most of my contributions over the years have been to the WAES because I’m familiar with a number of major studies commissioned to determine the payoff to investment in agricultural research, and the answer is always the same,” says Feltner. “It’s a huge return. Having kept in touch with UW reasonably well over the years, I knew any help WAES received would be well used by capable scientists.”

Research/Outreach Partner Award



WYOMING LIVESTOCK ROUNDUP

The Weekly News Source for Wyoming’s Ranchers, Farmers and AgriBusiness Community

For fourth-generation rancher Dennis Sun, summer is split between operating Sun Ranch, 40 miles west of Casper, with his family, attending meetings and advocating for the agriculture industry, and making sure the state gets the latest agriculture news in “the paper.”

The paper is the *Wyoming Livestock Roundup*, which has earned the Outstanding Research/Outreach Partner Award for 2017. “I never thought I’d be in the newspaper business,” says owner, publisher, and lifelong-rancher Sun.

The *Roundup* is a staple for the state’s farmers, ranchers, agribusinesses, and others with an interest in the state’s third largest industry. Weekly editions cover livestock and crop production, prices, weather, private lands, federal lands, consumer trends, ag news from D.C. and market influences from around the world. Livestock and equipment sales, fairs, youth activities, guest opinions, and obituaries are regular features in the *Roundup*’s pages and online editions.

“Dennis and all the staff at the WLR set the standard for this award,” says nominator Kelly Crane, associate director of UW Extension. “In my judgment, few entities contribute more to UW Extension’s mission to provide relevant, research-based information to Wyoming ranchers, farmers, agribusinesses, and rural residents than the WLR.”

Sun Attributes Success to Staff

The *Roundup*’s editorial team includes staff writer-editors and correspondents around the state. “Our goal is always to give readers quality, accurate reporting,” says Managing Editor Saige Albert.

AG APPRECIATION



WLR publisher Dennis Sun at the Public Lands Council Legislative Fly-in in April, 2017, in Washington, D.C. Photo: Niels Hansen

“The staff is really passionate and dedicated to the *Roundup*. They have an ag work ethic,” says Sun. “They work till the job gets done, not by the clock.” He notes as soon as the paper goes to press Friday morning, they start on the next week’s issue.

In addition to 52 regular editions a year, the *Roundup* publishes special editions, such as the Rocky Mountain Horse Edition, Midland Bull Test Edition, Wyoming State Fair and Rodeo Program Guide, Wyoming Seedstock Directory, and fall and winter cattlemen’s editions. In September, there’s a University of Wyoming special edition that includes UW and student accomplishments.

Relationships a Priority

Most mornings, Sun arrives at his office at the *Roundup* by 6:30 a.m., “when everything’s quiet,” to review the activities and issues of

Wyoming producers.

The *Roundup* is a member of almost a dozen organizations, including Wyoming Angus Association, Wyoming Farm Bureau Federation, Wyoming Horse Council, Wyoming Wool Growers

Association, and other state, county, and national industry organizations.

Sun is president of the Wyoming Stock Growers Association and has served on the College of Agriculture and Natural Resources Dean’s Advisory Board since 2005.

Says Crane, “The *Roundup* sustains a statewide network of agricultural professionals, businesses, elected officials, community members, and producers, which is an accomplishment largely unrivaled by other media sources in Wyoming.”

Albert points out UW Extension specialists are used regularly as sources, and the *Roundup* publishes columns by extension specialists each week. The paper also runs guest opinions from department heads and the UW president.

“We appreciate stories from UW sources because they provide practical information for producers that originates from research conducted within the state,” says Albert.

“We also have a great working relationship with many UW researchers who notify us about their work.”

“UW helps the state in so many ways,” observes Sun. “UW Extension helps ranchers, farmers, and kids in 4-H,” he says. “With UW being the only four-year university and largest ag program, if you don’t support it, you’re kind of cheating yourself and your family.”

The *Wyoming Livestock Roundup* was established in Worland in 1989. Sun purchased the paper in 2006. “It looked like it would be an enjoyable business to have and has proved to be. The *Roundup*’s success shows that hard work pays off.”

Wyoming Livestock Roundup Staff

Dennis Sun, publisher

Saige Albert, managing editor*

Emilee Gibb, editor*

Amanda Bell, production editor

Jody Michelena, advertising director

Curt Cox, director of livestock field services*

Andrea Zink, circulation and accounting manager*

Denise Olson, classified sales manager*

April Jones, livestock account sales executive

*Earned bachelor of science degree from the College of Agriculture and Natural Resources.



Weed scientist based at Powell Research and Extension Center dies in motorcycle crash

Colleagues and friends at the University of Wyoming mourned the Wednesday, August 2, death of a fellow scientist killed in a motorcycle accident in Nevada.

Gustavo Sbatella of Powell died in the crash near Valley of Fire State Park in southeastern Nevada, according to the Nevada Highway Patrol, which said heavy rain contributed to the crash.

Sbatella, 52, was an assistant professor in the Department of Plant Sciences and was based at the Powell Research and Extension Center.

"We lost an indispensable faculty member," says Jim Heitholt, head of the department. "He had a savvy for conducting research in weed science, and we as his colleagues became better scientists because of him."

The dean of the college echoed the sentiment.

"Gustavo was an accomplished scientist, a wonderful human being and a friend. We will miss him," says Frank Galey.

Sbatella was the extension irrigated crop and weed specialist and conducted research in the Big Horn Basin.

"Gustavo provided crop producers in northwest Wyoming and beyond with answers to their weed control issues and other production challenges," says Heitholt. "Our crop producers loved him as much as we did."



Gustavo Sbatella at this year's Powell Research and Extension Center field day

Sbatella also taught courses and mentored graduate students. He cared deeply about his students and making sure they were successful, says Heitholt.

"Students who worked in his program or had taken his classes not only learned the basics of how weeds grew, but also the practical aspects of how to employ environmentally sound control measures," he says.

Fellow weed scientist in the plant sciences department and collaborator Andrew Kniss recounted Sbatella's relationships with students.

"So many times as Gustavo and I were eating dinner in towns across Wyoming, former students would come

up to say hi," recalls Kniss. "And he remembered every one of their names. Every single one – even if it was 10 years since he had them in class as a graduate teaching assistant. He truly cared about his students."

Kniss said Sbatella was well respected by scientists and extension specialists across the western United States.

What will be missed most is his tell it like-it-is approach to communication, says Heitholt.

"He was extremely intelligent and did not use flowery, run-around language when describing how to solve a problem," he says. "He made complicated topics simple."

Sbatella, a native of Argentina, received his bachelor's degree in agronomy at the Universidad Nacional de Buenos Aires in 1990 and his master's degree in 2004 and Ph.D. in 2006 in agronomy at UW. He was a postdoctoral research associate in Scottsbluff, Nebraska, with the University of Nebraska from 2007-11 and an assistant professor with Oregon State University, Madras, from 2011-14.

Sbatella joined UW in 2014.

"I treasured Gustavo's friendship," says Kniss. "I loved listening to his stories. He always had great stories. And he always had time for a friend. I am truly heartbroken."

Sheep specialist joins University of Wyoming animal science department

A sheep specialist has joined the University of Wyoming and will provide information and programming through UW Extension.

Whit Stewart began in July in the Department of Animal Science, said Mike Day, head of the department.

Stewart previously worked as the Montana State University Extension sheep specialist.

“We’re excited to welcome Whit to our team” said Day.

Stewart will conduct research and teach senior-level sheep production and management courses in addition to his extension responsibilities.

Stewart graduated from Oregon State University in Corvallis, Ore., with a master’s degree in animal science after receiving a bachelor’s

degree in agricultural education from Brigham Young University-Idaho in Rexburg, Idaho.

He then worked 2010-2011 as a UW Extension educator in Campbell County before leaving to earn his Ph.D. in a joint program with Texas A&M AgriLife Research and New Mexico State University.

Hiring a sheep specialist was important because the state’s sheep industry is among the top four in the nation in almost every category.



UW Extension sheep specialist Whit Stewart judges a fleece at the Wyoming State Fair and Rodeo in Douglas.

“We have a progressive and involved sheep industry, and the industry contributes to our overall agricultural output,” said Day to the *Wyoming Livestock Roundup* earlier this year. “Sheep production is key to Wyoming’s agriculture industry.”

Branded meats coordinator encourages students,

The first items Sierra Jepsen set out when she moved into her office in the Animal Science and Molecular Biology Building were two pewter platters – awards for her service as a national beef ambassador – and a large belt buckle in a display box, won for her American FFA degree.

On the shelf above, are hard hat and clipboard from her days as an undergraduate meat judge at The Ohio State University.

Jepsen joined the Department of Animal Science in July as the

coordinator of the University of Wyoming’s Branded Meats program and coach of the meat judging team.

The Branded Meats program gives students opportunities to work in the meat lab and create new products for sale to other students, their families, and the public, she says. Beef snack sticks and summer sausage are now available in the Wyoming Union at CJ’s convenience store and the bookstore.

“We want to get the products into campus vending machines for quick,

healthy snacks,” says Jepsen. A wall of spice bins in a work area outside the meats lab suggests the possibilities for new flavorings students might create. Internships and student research opportunities are also available.

Jepsen grew up on a farm in Ohio that grows corn, wheat, and soybeans and includes an 80-head Angus beef herd. Her mom is an agricultural safety specialist and professor at The Ohio State University, while her dad farms full time.



Parasitologist joins Wyoming State Veterinary Laboratory

The Wyoming State Veterinary Laboratory's new parasitologist and the Cowboy State are a good fit.

One, she loves cows.

"I love cattle. I just do. I don't know why," says Berit Bangoura, heading the parasitology laboratory.

Two, she traveled across an ocean because the position was exactly what she wants.

"Diagnostics, teaching, and research," says Bangoura, of Germany. "There is a parity between them, and I like that. That's why I wanted to stay with a university and not go to a federal institution."

Bangoura started in May at the WSVL. She had been a member of the Faculty of Veterinary Medicine and a diplomate at the European Veterinary Parasitology College. Diplomates are veterinarians who complete a residency program and

pass the required examination.

Her position was about to expire at the university.

"I was looking for something new," she says. "I screened online for all the positions offered, and I applied. I had several opportunities, but I chose this university because of the profile of the position."

And, she adds, "Staying in Germany would not have been half as exciting as coming to Wyoming, and it is good for our kids as well to see something new."

She and her husband, Mohamed, have two children.

Bangoura is responsible for the diagnostic section of parasitology



Berit Bangoura

and will establish a research focus and teach the parasite course in veterinary sciences.

For her, parasites are cool.

"It's a huge part of infectious diseases," she says. "Parasites are everywhere, and they have so many different facets."

The pests include protozoa, worms, ticks, and mites, among others. "It's interesting to see the connection between the host and parasite," says Bangoura.

She says her transition into the WSLV has been smooth.

"It's amazing. The people are so kind here and very supportive," she says. "So it was easy to move into this position because everyone was so caring."

advocates for industry



Sierra Jepsen

Jepsen earned her OSU degree in agricultural business and applied economics, with animal science and meat science minors. She took a meats science course her fourth year "on a whim," and now encourages UW students to pair meats not just with animal science but other majors as well.

For example, engineers are needed to develop innovative packing facilities; marketers are needed for pricing and building relationships with producers, packers, grocers, and consumers.

About meat judging, she says, "You don't need an ag background to jump in." Team members learn what to look for in muscling and fat, how these relate to price and quality, and which cuts to roast and which to grill. "For those who want to learn to be a better cook, we can help with that, too," she says.

Jepsen admits her choice of careers brings questions on airplanes, but she appreciates how her experience enables her to advocate for the industry from the field to the meat case.

AWARDS

Livestock judging team records first top-five national finish in 25 years

Two University of Wyoming Livestock Judging Team members this spring recorded the highest-ever UW scores at national meets, and the team posted its first top-five national finish in 25 years.

Coach Caleb Boardman said Tyler Bauer, Fort Collins, Colo., and Zane Mackey, Torrington, posted the two top scores at the Houston Livestock and Rodeo Intercollegiate Meat Judging Contest in March, and UW placed fourth at the San Antonio Livestock Exposition Intercollegiate Livestock Show in February.

“The 2017 University of Wyoming Livestock Judging Team had a very successful spring season,” says Boardman. The team placed in the top 10 overall at each of the three national contests.

The team had multiple practice contests, judging more than 100 classes before the Denver National Western Stock Show and Rodeo in January.

“All of the workouts and practice contests paid off after the team was awarded tenth overall at the NWSS,” he says.

In San Antonio:

- The team was third in cattle and fifth in sheep, swine, and reasons.
- Mackey and Garrett Barton, Poway, California, finished fourth and eighth in swine respectively out of 126 contestants.

- Kassi Renner, Lovell, led the team individually with a top-25 finish.

At Houston:

- The team finished eighth in the 26-team field.
- The team tied for first in goats, was sixth in sheep and swine, eighth in placings, ninth in cattle, and tied for tenth in reasons.

Out of 210 contestants,

- Bauer was eighth overall, third in sheep, sixth in placings, and 12th in reasons.
- Mackey was 17th overall, fourth in placings, and sixth in swine.

“It was a record-breaking day for UW, both individually and as a team,” notes Boardman.

The team set a school record for the Houston contest in the overall score and the reasons score, which also now stands as the highest reasons score on record for UW, he says. This year’s team members recorded five of the top 10 individual scores ever recorded by UW contestants at the Houston competition.

“The team members extend a sincere thank you to the Department of Animal Science and College of Agriculture and Natural Resources for all the support they have given the livestock judging program,” says Boardman.



Members of the University of Wyoming Livestock Judging team after the Houston Livestock and Rodeo Intercollegiate Meat Judging Contest awards banquet. From left, coach Caleb Boardman; Zane Mackey, Torrington; Connor Madsen, Wheatland; Ty Shockley, Wheatland; Paige Alyward, Dickens, Nebraska; Garret Barton, Poway, California; Kassi Renner, Lovell; Amanda Hartman, Denton, Montana; Kyle Cavey, Berthoud, Colorado; Lucas Stalcup, Ashland, Montana; Tyler Bauer, Fort Collins, Colorado; assistant coach Colby Hales.

Agricultural honor society recognizes outstanding students, faculty members

The University of Wyoming chapter of the national agricultural honor society Gamma Sigma Delta Outstanding Student Awards recognized outstanding students and faculty members during its spring banquet in Laramie.

Go to bit.ly/mayagademics to see photographs of recipients.

Student awards

Outstanding Freshman – Aspen Jeffress, Rawlins, Animal and Veterinary Science (ANVS)

Outstanding Sophomore – Rachelle Tucker, Pierce, Nebraska, ANVS

Outstanding Junior – Trey Thompson, Cheyenne, Molecular Biology

Outstanding Senior – Alanna Elder, Laramie, Agroecology

Outstanding Senior – Rachel Purdy, Pine Bluffs, Agricultural Business

Outstanding Senior – Erin Hansen, Laramie, ANVS

Outstanding Senior – Cole Foreman, San Jose, California, ANVS

Outstanding Masters student – Austin Carey, Oro Valley, Arizona, ecosystem science and management

Outstanding Doctoral student – Hannah Cunningham, Meeker, Colorado, ANVS

Gamma Sigma Delta Faculty Awards of Merit

Excellence in Research and Teaching – Sadanand Dhekney, plant sciences

Excellence in Extension – Christopher L. Hilgert, plant Sciences

Gamma Sigma Delta Distinguished Service to Agriculture Award

Outstanding & Distinct Contribution to Agriculture – Scott Forrest, Torrington

Departmental & Program Awards

Agricultural & Applied Economics Outstanding Agribusiness Student Award – Emily Sikorski, Pinedale

Outstanding Agribusiness Student Award – Taylor Kirkbride, Meriden

Western Ag Economics Association Outstanding Senior – Rachel Purdy

Animal Science

Honor Book – Melanie Whitmore, Laramie

Honor Book – Erin Hansen Ecosystem Science & Management

Honor book (undergraduate) – Ryan Benjamin, Nyssa, Oregon

Honor book (graduate) – Beth Fitzpatrick, Laramie

Family & Consumer Sciences

Honor Book – Haley Ehrle, Shiocton, Wisconsin

Honor Book – Erin Lindorfer, Boise, Idaho

Honor Book – Danielle Raffa, Castle Rock, Colorado

Microbiology

Honor Book – Samantha Lambert, Cody

Molecular Biology

Honor Book – Andrea Sanchez Walk, Laramie

Irene Rosenfeld Scientific Achievement Award – Heidi Hanekamp, Laramie

Plant Sciences

Honor Book – Ada Harris, Portland, Oregon

Outstanding MS Student – Clay Wood, Sundance

Outstanding Ph.D. Student – Dennis Ashilenje, Kakamega, Kenya

Veterinary Sciences

Honor Book Award – Sarah Myers, Sheridan

Achievement Award – Amber Young, Saratoga

WSVL Achievement Award – Megan Weisensee, Deer Trail, Colorado



AWARDS

Gamma Sigma Delta honors Torrington producers

A Torrington-area couple was recognized by the University of Wyoming chapter of the national honor society of agriculture for their accomplishments, work with students and collaborations with researchers.

Gamma Sigma Delta presented Scott and Teresa Forrest with its Distinguished Service to Agriculture award during the organization's honors banquet in the spring on the UW campus. GSD also recognized outstanding academic students in the College of Agriculture and Natural Resources.

Forrest Farm produces organic corn and hay for organic dairy producers in Wyoming and surrounding states, says Anowar Islam, UW Extension forage specialist.

"I was very impressed seeing Scott's great farming operation systems and in-depth knowledge and enthusiasm for agriculture," says Islam, president of UW's GSD. "He is a hard-working farmer and has spent his entire life in agricultural production and business systems."

The Forrests and their daughter and son-in-law, Crystal and Ryan Woehlecke, operate the farm. Their sons, David and Brian Forest, haul all the corn and hay.

Forrest has collaborated with UW since 2010 when Islam, who had received funding from the National Institute for Farming and Agriculture and Wyoming Department of Agriculture Producer Grants, contacted Forrest Farm to conduct forage research.



Scott and Theresa Forrest of Torrington (front left) receive the Distinguished Service to Agriculture Award. Presenting are, from left, Mike Day, Brant Schumaker, Jim Heitholt, Donna Brown, and Anowar Islam.

He is involved in research with faculty members, extension educators, and students by providing not only experimental lands and facilities but also daily operations, data collection and monitoring, and reporting, said Islam.

"I noticed Scott is a great helper, especially to students for their land preparation, irrigation, weed control, plot harvesting and overall plot management," says Islam.

Forrest's contributions led to Wyoming Agricultural Experiment Station bulletins in 2015 and 2016.

Forrest provides information about his farm to other producers who are looking for ways to improve

agricultural production and test management options.

He also volunteers for student projects.

"A recent great example is helping students for their GPS projects in a remote sensing agricultural course in the botany department at UW," notes Islam.

Forrest started a dairy farm with his father in Berthoud, Colorado, in 1978. He moved to Torrington in 1994, and operated a dairy until being sold in 2013 and switching to raising organic corn and hay. Forrest Farm has been organic for 10 years.

Communications office earns national honors

An app offering users the history and wonders of Wyoming received the top award for information technology among land-grant university agricultural communication departments during a June national meeting in New Orleans.

Other members of University of Wyoming Extension's Office of Communications and Technology also received honors during the [Association for Communication Excellence](#) conference.

Media producer and director of broadcast media David Keto and Communications and Technology manager Tana Stith received a gold award and the Outstanding Professional Skill honor for ExploreWYO. The app opens a vault of more than 400 videos georeferenced to the state's landmarks, counties, history, culture, energy, flora, fauna and more.

Other awards received:

- Keto and media producer Lindsay Hadfield received a silver for news and features in the electronic video category.
- *Ag News*, the College of Agriculture and Natural Resources publication, received a gold award in the newsletter category. Those working on *Ag News* include Stith, editors/writers Steve Miller and Chavawn Kelley and designer Tanya Engel.
- The college's research publication *Reflections* received

a silver award in technical publications and a bronze in electronic publications.

- *CONNECT*, the magazine of UW Extension, received a bronze award in one-to full-color publications.
- Miller received a bronze award in feature writing for magazines.

"From the planning stages to the final product, each and every person in UW Extension Communications and Technology contributes to producing these award-winning publications and the ExploreWYO app," says Stith. "The real honor is working with this team."



Representing the University of Wyoming Extension, from left, Association for Communication Excellence President Steve Miller, Chavawn Kelley, Tana Stith, and Lindsay Hadfield received association awards.



UW Extension video producer David Keto received an Outstanding Professional Skill award for his work with Tana Stith in developing the ExploreWYO app. The award is the top honor among the information technology categories.

RETIREMENTS

Retirees represent more than four centuries of combined work

A record number of retirements in the college occurred following the 2016-17 academic year. They represent more than 407 years of service.



Professor Ann Hild
Department of Ecosystem Science and Management

Hild was known for her dedication and extensive research in range rehabilitation, but she was particularly interested in sagebrush. She also initiated the Shrub Ecology Field Trip. She taught courses to undergraduates and graduates in ecosystem science and management, range resource management, and scrubland ecology.



David Perry
Grants coordinator
Wyoming Agricultural Experiment Station

Perry graduated from Harvard University and received his Ph.D. in biology research in animal science and molecular biology. He worked as a research scientist in molecular biology and animal science. Perry worked on a team that studied the benefits of spider silk and concluded his career in the Wyoming Agricultural Experiment Station.



Professor KJ Reddy
Department of Ecosystem Science and Management

Katta Jayaram Reddy received the John P. Ellbogen Meritorious Classroom Teaching award. He worked in the Department of Renewable Resources, later ecosystem science and management, serving as the associate director for academics for the School of Energy Resources. He is known internationally for his research on the removal of arsenic from drinking water and mineral carbonization of hazardous waste.



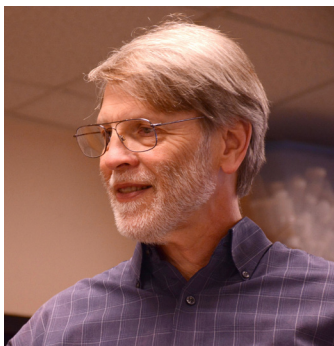
Professor Dan Rodgers
Department of Ecosystem Science and Management

Rodgers received the John P. Ellbogen Lifetime Teaching award. He has taught almost every class within his department, but he is best known for his plant identification, grass taxonomy, and poisonous plant classes. He also served as adviser to the Range Club and Rodeo Club since 1992.



Professor Rhoda Schantz
Department of Family and Consumer Sciences

Schantz was known for her passion toward her students. Her motto has always been, "Students, the reason we're here." Schantz has been known to say her most noteworthy accomplishment has been working with students in the laboratory and in the classroom. Besides teaching, Schantz directed the dietetics program for over 20 years.



Professor David Legg
Department of Ecosystem
Science and Management

Legg was the “go-to” guy for students and colleagues when it came to statistical methods and statistical analysis. Legg was also familiar with insects, as he taught insect biology, insect anatomy and physiology, and forensic entomology. Legg was a professor of entomology and statistician for the Agricultural Experiment Station.



Professor Michael Liebman
Department of Family and
Consumer Sciences

Liebman throughout his career at the university taught a variety of upper-level nutrition classes. Liebman taught classes such as sports nutrition, advanced nutrition, and nutritional aspects of proteins and amino acids. Liebman played a key role in the nutrition and diet program. He was best known for his research in oxalate analysis of food.



Professor Rich McCormick
Department of Animal
Science

McCormick spent several years in the classroom teaching and guiding students pursuing a degrees in the animal science department. Classes he taught included meat science, animal biology, topics and issues, and food safety. McCormick had several research interests, which included structural analysis of muscle proteins and effects of processing on proteins.



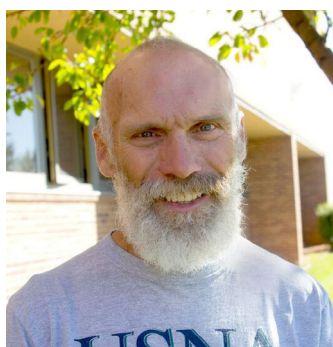
Professor Kurt Miller
Department of Molecular
Biology

Miller started his Ph.D. program at Boston University, and his post-doctorate was at John Hopkins University. Miller began his career as a scientist in a biotech company in Boulder, Colorado. He is a microbiologist who has studied peptide antibiotics and the foodborne pathogen listeria. He taught biochemistry for undergraduates and medical students.



Professor Mark Stayton
Academic and Student
Programs and Department
of Molecular Biology

Stayton started his career in Berkeley, California, with an agricultural biotech company before joining the university faculty. Stayton joined molecular biology where he became the chairman of the department for eight years and taught biochemistry to undergraduates and medical students. Afterward, he accepted the position of associate dean and director of the Office of Academic and Student Programs.



Ed VanKirk
Senior research scientist
Department of Animal
Science

VanKirk spent 35 years teaching members of the university to help obtain their goals. He has taught within several different areas, including teaching faculty, post-doctoral students, graduates, and undergraduates. VanKirk was a senior research scientist who focused on reproductive biology. He concluded his career with the animal science department.



Professor Virginia Vincenti
Department of Family and
Consumer Sciences

Vincenti initiated the highly successful Consumer Issues Conference, co-chairing most of the 14 conferences, in collaboration with other colleges and units on campus, consumer organizations, and government departments and agencies. She is also engaged in a multi-state research project to identify risk and protective factors in families that can help prevent elder financial exploitation.



Professor Jim Waggoner
Department of Ecosystem
Science and Management

Waggoner worked in the animal science department and rangeland ecology and watershed management. He taught classes such as nutrition, production, laboratory classes, and research management. Waggoner also worked in University of Wyoming Extension as a livestock and wildlife nutritionist and started the forage analysis program. Waggoner managed the university cattle herd for almost 30 years.



AG NEWS

Editors: Steve Miller, Chavawn Kelley • Layout and Design: Tana Stith, Tanya Engel

The University of Wyoming is an equal opportunity/affirmative action institution



Saturday, September 23
Prior to kickoff vs. Hawai'i

**BBQ beef, pork and lamb
sandwiches, soda, and water**

**\$12 for adults,
\$5 for children (ages 6-12),
children under 6 eat for free**

**Located in the southwest corner of the Pepsi Pre-game Zone
in the Cowboy Joe Club Tailgate area
inside the Wyoming Indoor Practice Facility**

Proceeds benefit College of Agriculture & Natural Resources Student Organizations



**Ag Day barbecue raises money for
student groups, scholarship**

The Ag Day BBQ is Saturday, September 23, prior to the Hawaii vs. Wyoming football game.

Game time was to be determined.

Last year's barbecue raised more than \$7,800 for the scholarship funded by the event and for student agricultural organizations. The Food Science Club prepare the food, and members of ag student groups volunteer to serve.