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Professor Anne Sylvester and Associate Professor Scott Miller are lead researchers in a \$20 million grant – the largest ever received by the University of Wyoming SEE STORY PAGE 3

### UNIVERSITY OF WYOMING COLLEGE OF AGRICULTURE AND NATURAL RESOURCES



Dean Frank Galey

66 The talent of success is nothing more than doing what you can do well, and doing well whatever you do. ??

> Henry Wadsworth Longfellow

#### Dear Friends and Colleagues,

Fall, and the start of a new academic year, is the perfect time for an update on the teaching excellence in the college. Eleven percent of the college's full-time instructional faculty members have won one or more university-wide, regional, or national teaching excellence awards.

Since 1993, four faculty members have received UW's highest faculty honor – the prestigious George Duke Humphrey Distinguished Faculty Award. Two of nine Wyoming Excellence Chairs are within our programs.

Formally recognizing faculty members, particularly those who excel in teaching, research, and outreach over many years and, in some cases, decades, has been one of my goals as dean. This is why I am delighted to announce the creation of a lifetime distinguished faculty award.

A few years ago, Andrew Vanvig, who served as head of the Department of Agricultural Economics for 25 years and was a faculty member for 34 years, approached me about creating a faculty achievement award. Andrew and his wife, Connie, had previously created permanent scholarship funds to help undergraduates and, more recently, graduate students, but they also wanted to acknowledge our best faculty members. As an outstanding educator, leader, and mentor to graduate students, Professor Vanvig knew the college lacked the means to offer a significant senior faculty award. The Vanvigs' most recent gift has changed this.

I am pleased to announce that this September the college will award the inaugural Andrew Vanvig Distinguished Lifetime Achievement Award. It is entirely fitting Stephen D. Miller receives the first Vanvig Distinguished Lifetime Achievement Award. Steve is well known throughout the Rocky Mountain region and the nation for his work in weed science. His exceptional career includes a deep commitment to teaching and graduate education as well as extensive research and academic leadership. After coming to UW in 1984, he has worked with industry, taught numerous undergraduate and graduate students, and served three years as director of the Wyoming Agricultural Experiment Station. He is a staunch advocate for the land-grant mission of teaching, research, and extension, and his professional life has reflected that dedication. See page 12 for his story.

I hope you join us September 14-15 at this year's Ag Appreciation Weekend events. This year's honorees include Mick Botkin and Ken Gauger, who will receive our outstanding alumni awards, BP America will be honored as this year's Research Partner of the Year, and Ron and Lynne Pulley will receive our Legacy Award. This issue of Ag News contains stories on each of our recipients and also on the university receiving its largest-ever grant, our field day at the Powell Research and Extension Center, and the 150th anniversary of the Morrill Act, which created the land-grant university system.

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Dean Frank Galey College of Agriculture and Natural Resources

### UW RECEIVES BIGGEST-EVER GRANT TO STUDY WYOMING HYDROLOGICAL SYSTEMS

Researching the state's hydrological systems and how they respond to changes, including pine beetles and climate variability, has drawn the largest grant in the history of the University of Wyoming.

The \$20 million, five-year grant from the National Science Foundation to Wyoming's EPSCoR (Experimental Program to Stimulate Competitive Research) office, will also establish the Wyoming Center for Hydrology and Geophysics at UW.

Two faculty members in the College of Agriculture and Natural Resources – molecular biology Professor Anne Sylvester and Scott Miller, an associate professor in the Department of Ecosystem Science and Management – will lead the research with Steve Holbrook, professor in geology and geophysics in the College of Arts and Sciences.

In addition to establishment of the hydrology and geophysics center, the grant provides for four new faculty positions, two facility managers, two information technology positions and a variety of graduate and undergraduate research opportunities.

This interdisciplinary award brings together researchers and educators from four UW colleges and 11 departments.

The grant will pay for acquisition of scientific equipment, including streamflow and groundwater measurement devices. Much of that equipment will be portable, allowing for temporary field installations around the state.

EPSCoR supports efforts to enhance research, science and mathematics education, and workforce development.



Associate Professor Scott Miller, left, and Professor Anne Sylvester will lead the \$20 million project with Professor Steve Holbrook in the College of Arts and Sciences.

Changes that can affect hydrological systems include pine beetle outbreaks, which could alter snowpack melt rates and affect late-season streamflows and groundwater recharge; climate variability, which has already been shown to have wide-ranging impacts on water resources; and shifts in land use, such as oil and gas development, says Miller, a hydrologist.

Wyoming community colleges are part of the effort, which will include collaboration with multiple state and federal agencies and the Wind River Tribal College. In addition, at least three private firms have agreed to provide summer internship opportunities for students in exchange for use of hydrology and geophysics center equipment.

"We'll be building research infrastructure for the entire state and bringing new technology to the region," says Sylvester, who heads Wyoming's EPSCoR. "As the only research university in the state, we recognize and embrace our responsibility to conduct statewide research consistent with the state's needs."

Educational outreach is a major component of the program and will include work with high school and community college teachers around the state. A series of town hall meetings is planned around the state to seek public input on water issues.

## FIRST CUTTING

### POWELL RESEARCH CENTER SHOWS STUDIES TO BIG HORN

Big Horn Basin producer Brian Duyck responded succinctly when asked what he wanted from University of Wyoming's research and extension (R&E) centers.

"Show me how to save money or make extra money," noted the native seed producer and member of the Powell R&E Center (PREC) advisory board at the center's field day in July.

About 110 toured sub-surface and surface drip irrigation plots, research into phosphate rates on sugar beets, strip tillage and other weed-management methods in dry beans, and the effect of limited irrigation on sunflower growth. To view a photo gallery, see http://bit.ly/PukC0tfieldday.

Center director Abdel Mesbah said there are 39 research projects at the center that can be applied by producers in the Big Horn Basin. He says he had heard comments this spring UW was not conducting agricultural research in areas pertinent to Wyoming producers.

"I'm sorry to hear that," he said. "Maybe they are misinformed. Since I took this job, as director and researcher, every year I put more than 20 applied research projects for our producers to use here. If you check our progress reports, you'll find all that there."

Those attending the field day also heard from University of Wyoming administrators how the university connects with Wyoming citizens and how citizens can connect with UW resources.

"Ships," advised producer Kelly Spiering, chairman of the PREC advisory board, about how to do that.

"I'd like you to think about ships – that means friendships, relationships, and partner-



Bret Hess, Agricultural Experiment Station director, Frank Galey, dean of the college, Tom Buchanan, UW president, and Abdel Mesbah, director of the Powell R&E Center, during a panel discussion that started the field day at the center.

ships," he told those gathered to hear UW president Tom Buchanan, Frank Galey, dean of the College of Agriculture and Natural Resources, and Bret Hess, director of the Agricultural Experiment Station.

"That's what I think is lacking in this nation and what's what is lacking in what we are talking about with the university," said Spiering.

The facilities and research at the center came about because of people working with researchers, corporations, and producers, he said.

"This building, seed lab, greenhouse, hoop houses, the sprinkler irrigation system

– all came from relationships," he noted."All the projects out there took a lot of time and effort."

He then challenged those in attendance to develop friendships and relationships.

"Talk to other producers, talk to those from the university and remember them and continue that relationship and you can do an almost unlimited number of things."

Buchanan, who had met with Governor Matt Mead earlier that day in Cheyenne before flying to Powell and who had another commitment that evening, noted changes at the center over the last several years.

### **BASIN PRODUCERS**

"I was here some time ago, more than a couple years ago," Buchanan told the crowd. "It's pretty astonishing to see some of the changes that have taken place, the level of sophistication, and level of what is going on today compared to three or four years ago. That's a compliment to the people who work here. They are turning it into a showcase for the state, and we're proud to have our name on it."

He talked about the need for citizens to engage with UW and advised residents to pass along opinions to UW Board of Trustees members.

"They are my bosses and the ones who set policy and direction for the University of Wyoming," Buchanan said. "They take their jobs very seriously. If you talk to them, we hear about it. They are a significant conduit to me and others at the university. When you see them or have the opportunity to invite them up here, do that. You will have a powerful advocate in your corner."

Galey said the college asked advisory board members from the four research and extension centers to reach out to more producers for input. He said UW Extension would become more engaged with the centers, and that an economic analyst has been hired, based at the James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle, available to all the centers to study crop and production budgets.

"If you are interested in any type of economics related to crop production, let us know," said Hess. "We have the person in place who can assist in that area."

### GALEY HONORED FOR NATURAL RESOURCE PROTECTION EFFORTS

Dean Frank Galey was honored for his efforts to protect Wyoming's natural resources.

The Wyoming Stock Growers Association (WSGA) presented Galey the Guardian of the Grasslands award during its Wyoming cattle industry convention in Jackson.

"The college's partnership with the Wyoming Stock Growers Association is very important," notes Galey. "We work well together, and I feel very privileged to have been given this award."



The award is not limited to members of the WSGA nor

is it intended to be awarded annually but when a uniquely qualified candidate emerges, according to the WSGA.

Dean Frank Galey

Galey has demonstrated outstanding efforts through strong leadership of the governor's brucellosis task force, his commitment to brucellosis research, as well as his contribution to the College of Agriculture and Natural Resources for the past 13 years, according to the WSGA.

"While working in the dean's office, I saw on a daily basis how important agriculture and natural resources are to Galey," says Brittany Schaneman, WSGA intern and recent College of Agriculture and Natural Resources graduate.

"He strives to encourage students to enhance the image of agriculture and natural resources in Wyoming."

Galey received his Ph.D. in veterinary biosciences and holds a specialty certification in toxicology. His research interests include the fields of diagnostic and forensic medicine, plant and other natural product poisonings, analytical pharmacology, and toxicology.

### UW DIAGNOSTIC EXTERNSHIP PROGRAM HOSTS VETERINARY STUDENTS

Veterinary students Vanessa Chen and Matt Hille studied diagnostic veterinary medicine at the Wyoming State Veterinary Lab (WSVL) in Laramie this summer through the University of Wyoming's Diagnostic Externship Program.

Externships are available to third- or fourth-year veterinary students and offered by the Department of Veterinary Sciences. An externship is supervised practice off-campus or away from a student's affiliated institution.

"It exposes the students to

the realities of diagnostic veterinary medicine as a career," says Donal O'Toole, professor in the department and diagnostic externship mentor. "We need more students – ideally, of the right type: curious, outgoing, broadly educated, compassionate, problem-solving – looking at this career option."

Chen, a native of Canton, China, who grew up in Temple City, California, had a four-week externship from the School of Veterinary Medicine at the University of California, Davis. She has an undergraduate degree in neuroscience and plans to pursue a career in pathology.

"The defining feature of this veterinary lab to students is the learning environment the lab engenders," says Chen. "Among the various labs there are undergraduate pre-vet students, graduate students, externs, and professors all working together. This con-



Matt Hille and Vanessa Chen are immersed in diagnostic veterinary medicine during their summer externships at the Wyoming State Veterinary Laboratory.

tinual pulse of new energy keeps students and professors excited."

Hille, a Cheyenne native who grew up in North Platte, Nebraska, holds a master's degree in animal and veterinary science from UW; he is entering his third year of veterinary school at Iowa State University through a joint Iowa State and University of Nebraska-Lincoln collaborative program.

The Kelly Palm Memorial Externship supports Hille's externship, which is only offered to UW graduates attending a veterinary school in the United States.

"Ever since I found out about the opportunities available to someone with a DVM degree, I have had an interest in anatomic pathology or microbiology as a career option, and that is the main reason I pursued this externship in the first place," relates Hille. "The ability to essentially jump around different labs at the WSVL and see all the more interesting things on a daily basis throughout the laboratory has been great, and I've learned a lot."

Hille says he wants to practice mixed animal medicine, including small and large animals, in one of the Rocky Mountain states upon graduating from Iowa State and may pursue anatomic pathology or microbiology. Hille says his wife, Katie, a native of Sidney, Nebraska, and a UW College of Education graduate, likes that idea.

"Fortunately, my wife misses Wyoming as much as I do and returning to Wyoming would be our ideal situation," he says.

In addition to necropsies, microscopies, and other lab work, Chen and Hille participated in bison vaccinations, radio tracking deer near Douglas, and branding cattle at the Y Cross Ranch, owned by UW and Colorado State University, in Horse Creek.

They were exposed to the full range of diagnostic services and to wildlife cases, according to O'Toole.

"Unlike full-service veterinary diagnostic laboratories that are affiliated with veterinary schools, our caseload is from the field," says O'Toole. "It is not from cases that have been worked up extensively in a veterinary teaching hospital, which tend to be referrals like weird or terminal cases."



### STUDY REVEALS ROBUST WYOMING SHEEP INDUSTRY

Wyoming has a robust sheep industry, and sheep production will likely remain a vital part of the state's agricultural economy for the foreseeable future, according to a study conducted by researchers in the college.

Published in April, the *State of Wyoming Sheep Industry* reveals that many Wyoming ranchers still earn a large portion of their income from sheep production.

"Livestock is an important industry for the state and provides a lot of jobs and revenue," says Associate Professor Brenda Alexander in the Department of Animal Science. "There are certainly many places in the state that are particularly suited for sheep production. In Wyoming, there is also a strong sheep heritage."

However, the study revealed that, with 25 percent of Wyoming sheep producers over the age of 65, young producers are needed to maintain the vitality of sheep production in the state.

"We have students all the time who are



"There are certainly many places in the state that are particularly suited for sheep production. In Wyoming, there is a strong sheep heritage."

interested in raising sheep," says Alexander. "During this four-year USDA grant, I had two student interns who were going home to raise sheep after they graduated. Will there be enough? I don't know, but I hope so."

The study also found profitability is affected most by feed sources, ram libido, and predation.

The publication is available for free download from UW Extension. Go to www. uwyo.edu/ces and click the Publications link on the left side of the page. Click Search Bulletins, and type B-1229 in the Publication Number field. Click on the title to open.

The study was funded by a grant from the National Institute of Food and Agriculture. The National Agricultural Statistics Service distributed a survey, written by Alexander, to Wyoming sheep producers in 2008.

Alexander and other UW contributors conducted further research and analyzed the data.

Contributors included John Hewlett, UW Extension farm/ranch management specialist, Benjamin Rashford, associate professor and natural resource economics specialist, and Lane Gardiner, graduate student, all in the Department of Agricultural and Applied Economics.



#### UW Extension research may help Wyoming vegetable gardeners

Research by the University of Wyoming Extension may assist gardeners in the state select varieties of tomatoes, peppers, beets, and carrots based on yield and nutritional content.

"Two years of studies on vegetables may provide some help for Wyoming gardeners," says project director Karen Panter, UW Extension horticulture specialist. "Yields as well as nutritional information gained from laboratory analyses may be valuable to vegetable producers and consumers alike."

The research also examined the benefits of season-extension systems including high tunnels and row covers. It also analyzed various fertilizers, weed-control methods, and insect damage on vegetables grown under different fertilization schemes.

Results are detailed in three UW Extension publications: RJ-216, Vegetable yield evaluations and nutritional contents; RJ-217, Vegetable production and nutritional content in season-extension systems; and RJ-218, Weed controls and insect pest evaluations.

The publications are available for free download. Go to www.uwyo.edu/ces and click the Publications link on the left side of the page. Click Search Bulletins and type RJ-216, RJ-217, or RJ-218 in the Publication Number field. Click on the title to open.

# AG APPRECIATION

### Schedule of Events

The University of Wyoming College of Agriculture and Natural Resources outstanding alumni, research/outreach partner, and legacy winners for 2012 will be honored September 14-15 as part of Ag Appreciation Weekend, a celebration of the importance of agriculture to Wyoming's history, culture, and economy.

Ag Appreciation Weekend events include:

#### FRIDAY, SEPTEMBER 14

• Dean's Ag Appreciation Dinner. Attendance by invitation only.

#### **SATURDAY, SEPTEMBER 15**

 30th annual Ag Appreciation Day Barbecue,
2-3:30 p.m. at Tailgate Park. Tickets can be purchased at the event or prior by contacting Mandie Corcoran in the Office of Academic and Student Programs at (307) 766-4034 or mandie@uwyo.edu.

College of Agriculture and Natural Resources student organizations prepare and serve the meal. Proceeds provide scholarships for College of Agriculture and Natural Resources students and help fund various agriculture college student organizations. Sponsors include the College of Agriculture and Natural Resources, local businesses, agricultural groups, and individual donors.

• UW vs. Cal Poly football game begins at 4 p.m. The College of Agriculture and Natural Resources has reserved Ag Appreciation Weekend group football tickets.

The tickets are in section G – adults \$25, children \$12 (children sixth grade and under free with purchase of an adult ticket). Go to www.wyomingathletics.com and scroll over Tickets and click Promotions; click Here to enter the promotion code AGDAY; enter the code into the box and click Go; click on the Cal Poly game; enter the ticket quantity and then click Add to Cart; enter the word verification and click Continue; select ticket delivery method and click Check Out; click on Register Now to enter customer information and complete transaction. Go Pokes!

# Outstanding Alumnus always ANIMALS, NATURALLY

Mick Botkin found his calling early in life on the Botkin family farm near Fruita, Colorado.

Born in 1922, Botkin was engaged from the get-go in all aspects of working on the farm, but he had a special affinity for animal husbandry.

"I was always interested in livestock," says Botkin, a 2012 Outstanding Alumni Award recipient and former faculty member in the college. "I was in 4-H and raised animals – sheep, pigs, horses, and dairy cows."

Botkin's father, Paul, once recounted his son's remarkable abilities with animals.

"As a young boy, Mick could walk into a barn full of mama ewes and baby lambs and know exactly which lamb went with which ewe," he says. "He was the only one in our family who could do that."

#### Friend's Persuasion Led to UW

After high school, Botkin attended Mesa Junior College in Grand Junction, Colorado, in 1941 and 1942. Then, Botkin's longtime friend, Ward Smith, persuaded Botkin to move to Laramie and enroll in the University of Wyoming. "I was led up to Laramie by Ward who was on the UW faculty at the time," Botkin recalls. "He gave me a place to stay and helped me out. It was an easy decision."

Botkin enrolled in UW in 1942 and enlisted in the Army Reserve. He had completed two quarters at UW when duty called. Botkin was deployed to Europe in 1943 where he served in the 76th Infantry Division of the U.S. Army, attained the rank of sergeant, and was a squad leader. His division helped defeat the German Army during the Battle of the Bulge in December 1944 and January 1945.

"The most memorable part of all was the terrific force that was generated by us and our allies that totally destroyed Hitler's plan for world domination," says Botkin. "That was our purpose in being there."

The war ended and Botkin returned from Europe unscathed; he says home was never sweeter.

"I'd been overseas so long that I figured once I got home to America I'd stay there," says Botkin. "I didn't ever want to leave again."

#### **BOTKIN RECOUNTS HIS WORLD WAR II SERVICE**

"After the Battle of the Bulge, we returned to France, then Luxembourg, and were involved in breaking through the Siegfried Line, and our division was part of the spearhead all the way across Germany. We ended up near Czechoslovakia when the war ended in May 1945. Although we went through untold hardships and saw a lot of injuries and death and destruction, there were a lot of us who came through uninjured. The most memorable part of all was the terrific force that was generated by us and our allies that totally destroyed Hitler's plan for world domination. That was our purpose in being there."

# WEEKEND had affinity for animal husbandry

### Finishes College, Marries

In 1948, Botkin received his bachelor's degree in animal production from UW and married his sweetheart, Lynn, in Fruita they have four children: Jean Pederson, Paul Botkin, Jan Botkin-Therkildsen, and Julie Wade.

"Mick Botkin is my father, and I am so proud to call him Dad," says Wade. "He possesses a combination of qualities rarely found in one person. He is extremely smart, and at the same time, he truly and intentionally holds every person in the highest regard."

Botkin received his master's degree in animal production at UW in 1949 and his Ph.D. in animal husbandry from Oklahoma State University in 1952 with a thesis on the "Repeatability of weights and gains in range beef cattle." Botkin's academic work earned him membership in the prestigious Phi Kappa Phi.

"His membership in Phi Kappa Phi, based on his superior scholarship at the University of Wyoming, was an outstanding achievement, given that he put himself through school while working several jobs," recalls Botkin-Therkildsen.

#### Enjoyed Students, Colleague Relationships

Botkin was appointed assistant professor in the Animal Production Department at UW in 1952. He particularly focused on mentoring students, judging 4-H and state fair livestock contests, publishing articles and manuscripts, and contributing his expertise to bettering the Wyoming sheep industry.

It wasn't all work, though.

"Somewhere along the line, after serving



Professor Emeritus Mick Botkin joined the animal production department at UW in 1952 and retired in 1984.

on many programs at the university, Mick somehow became permanent chairman of the ad hoc 'tavern committee,'" says Don Meike, UW graduate and longtime friend. "Mick well recognized the necessity of relaxation and fun even when confronted with very serious problems."

Above all, Botkin recounts the relationships he developed with colleagues and students.

"I enjoyed knowing them and working with them," Botkin says. "Some of the best memories are the trips I made with students out in the field and putting them to work. We were lucky that a lot of them became good friends." Botkin, who will turn 90 in September, retired from UW as professor emeritus in December 1984. He still maintains ties to sheep producers through his continued membership in the Wyoming Wool Growers Association and Wyoming Stock Growers Association.

#### MANY SIGNIFICANT CONTRIBUTIONS TO HIS FIELD

Botkin's contributions include development of facilities and procedures in breeding and management research in both swine and sheep and developed procedures for progeny testing of sheep; involved in initial research in employing llamas in prevention of sheep predation; member of regional research committees and served as chair; published 34 manuscripts in refereed journals; published 17 bulletins and circulars; after retirement, wrote Sheep and Wool: Science, Production and Management, a 451-page college textbook; with a 60-percent teaching appointment, taught up to six individual courses in sheep and swine production and management in animal breeding and livestock evaluation; coached the Livestock Judging and Live Animal Evaluation Team in the Department of Animal Science for more than 25 years; advised up to 10 undergraduate students annually and numerous graduate students during his 32 years as a faculty member and continues to mentor many former students; helped establish and administer the Wyoming Rambouillet Association Ram Test from the early 1960s until his retirement in 1984.

OUTSTANDING ALUMNI

# AG APPRECIATION

# Legacy Award recipients lives' immersed in Although retired now, they're still involved in all things agriculture

Legacy Award recipients Lynne and Ron Pulley have been married a long time, but the connect between their families started many years before when a wood and paper airplane dropped out of the western Nebraska sky and crashed in a pasture.

The fatal crash site was about 20 miles from where Ron was raised on a dryland wheat farm. The pilot was a pioneer in the aircraft business – Walter Piper of California – and Lynne's grandfather.

"That was nothing we knew about until we were married and I brought her back home and suddenly one day as she was introduced to one of mom's friends, the friend looked up and says 'Oh, I've written to your grandmother for years because the crash site was in our pasture," relates Ron. "It's a small world."

Lynne points out that, as far as she knows, there was no relationship to Piper Aircraft.

"That wasn't his first crash, but that one got him," she quips.

#### **Ron Changes Career Course**

Many years after the crash, coast again met heartland when Ron decided to attend University of the Pacific in Stockton, California. There were relatives there and a comfort zone.

His goal for a career as a pharmacist was cut short. "After one class of organic chemistry, I didn't like that whole idea, so I took some business classes and changed to psychology and received a bachelor's degree in psychology. It's been very valuable to me over the course of the last 45 to 50 years."

Meanwhile, Lynne, a Glendora, California, native, graduated from a small (10 in her graduating class) high school and



Lynne and Ron Pulley established the Seneka Graduate Assistantship in 2008 for graduate students studying food and nutrition.

was never far from agriculture. Her grandmother raised Aberdeen Angus and Arabian horses. She met Ron while attending University of the Pacific.

"I was a Girl Scout forever," she says. "So I was outside all summer long at camps. I was outdoors working with horses, things like that. It came natural. My grandmother loved animals and that came right down the line. I wanted more, but it didn't work out that way."

#### **Always Ag Oriented**

They've now retired after a life of taking care of just about every four-legged animal a person would find on a farm or ranch. They've lived in western Iowa, eastern Nebraska, Grand Junction, Colorado, and Cheyenne then Huntley. Ron and Lynne raised swine, managed swine operations, and Ron, in a career turn, worked in banking.

LEGACY AWARD

# WEEKEND

## agriculture

"In a nutshell, we've been agriculturally oriented most of our lives," says Ron. "Yes, I've had white collar jobs but until about two years ago it was 42 years of the famous 24/7, where someone was home taking care of some type of four-legged creature."

They did so as a crew of two because, says Ron, when committed to agriculture a producer is not going to find a whole lot of help that is as committed as the producer and "you are not comfortable leaving your "children" with other people because you always are worried they are not being taken care of quite like you would have."

#### **Adjust to Retirement**

They raised mulefoot hogs and Scotch Highland cattle. When the couple found a place in Boulder for their hogs, they slowed down.

"You have to adjust to the fact you can now get up in the morning, put your clothes on and go someplace rather than go out and do two hours of chores, hurry to someplace, and get back and do more chores," he says. "We miss the animals obviously, but the nice thing about it is our hogs are basically in hog heaven down in Boulder."

The Pulleys don't have to worry about how their hogs are handled. The hogs are in comfortable facilities, says Ron, being used by a restaurant chef who raises all the food he serves.

"We are very comfortable with what he is doing and, if we really want to see them, we can go to Boulder and scratch them behind the ears," says Ron.

#### COLLEGE'S APPLIED RESEARCH DIRECTION DRAWS PULLEY'S ATTENTION

Want to get the Pulleys animated?

Just say "research."

Ron Pulley is on the James C. Hageman Sustainable Agriculture Research and Extension Center (SAREC) Citizens Focus Group and is a member of the college's academic advisory board.

The SAREC and Powell Research and Extension Center advisory boards initiated a meeting on the UW campus last November with college researchers, administrators, and students to talk about research projects.

The goal was research applicable to Wyoming producers.

A meet and greet followed for lunch. "We were expecting 10 or 15, but we had like 47 people," says Ron, who was delighted with the results. Those included faculty and staff members, researchers, and students. "We talked for two hours, and I was watching students sitting down with people from Powell grilling the farmers on things. It was a wonderful experience."

One of the group's discoveries was there is funding to pay for the infrastructure/facilities for research, but there are limited opportunities to support applied, producer-driven research.

He says the groups then got "a little carried away," asking \$200,000 from the Wyoming Legislature to fund research.

Some may not have understood the purpose of the group's efforts.

"I think we've overcome that as far as hurt feelings," Ron says. "We didn't intend to hurt feelings."

Ron sent a letter to a group of producers asking to prioritize research topics they wanted. The contacts came from the extension service and from the agricultural industry and commodity groups.

"If, in the future, we have a graduate student who looks to his or her adviser and says, "I really don't know what to work on," a producer can bring them a project and have 15 acres, for example, to do the research on," notes Ron. "Suddenly we have this package put together. We have a body that asks to do research, a location for research, and we looked up and saw what was missing: funding. That's why we went to the legislators. We wanted to have a little bit of seed money so we can bait this seed money. Not just graduate students. This project goes as far down as community colleges."

Producers, facing immediate problems in their crops or pastures, move at one speed, says Ron, and academia moves at another.

"If a farmer or rancher has a bad influx of weed problems in his field, he can't really wait years for academia to figure out some type of spray to put on it to eliminate the problem," he says. "He wanted the answer yesterday. These are the things we are working on now. What we are trying to do is match those two speeds so we can get on the same page of the playbook."

# AG APPRECIATION

# Research, commitment to students draws Andrew Vanvig Distinguished Lifetime Achievement Award

Sixty-five graduate students, 200 proceedings and abstracts, 37 extension bulletins, 470 research progress reports, nine books and/or book chapters, 58 miscellaneous publications – you get the idea

Stephen D. Miller was born in 1946 in Greeley, Colorado, and grew up on his family's dairy farm where cows and crops were raised. Cows were the farm's primary focus, but Miller had a strong aversion to the bovines.

"I did a lot of milking, getting up at 4 a.m.," recalls Miller. "I never did enjoy it."

In addition to his cow milking duties, Miller had to hand-hoe the sugar beet fields, a tedious chore but one that sparked his imagination; his loathing of cows and interest in crops set him on course to become a weed scientist.

"I said there's got to be a better way of controlling weeds than a hoe," he recalls. "That seed was planted in me early since I was helping weed the beet fields when I was little. That's why I went into agronomy."

Miller attended Valley High School in Platteville, Colorado, and graduated in 1964 then enrolled in Colorado State University (CSU). He met his wife, Bonnie, in Greeley, and they were married in August 1969.

During his career, Miller was a prolific writer and published 60 refereed journal articles, 200 proceedings and abstracts, 37 extension bulletins, 470 research progress reports, nine books and/or book chapters, 27 dissertations, 58 miscellaneous publications, and 42 invited presentations.

#### **Honors and Awards**

- 1995 Fellow, Western Society Weed Science
- 1993 George Duke Humphrey Award, University of Wyoming
- 1992 Research Runnerup No-till Tiger, CTIC
- 1992 Superior Service, Beet Sugar Development Foundation
- 1991 Outstanding Weed Scientist, Western Society Weed Science
- 1984 Outstanding Contributions to No-till Farming, Manitoba-ND - Zero-till Assoc.
- 1984 Merit Award, North Dakota Ag Chem Association

#### **Memberships**

- Alpha Zeta
- American Society of Agronomy
- American Society of Sugarbeet Technologists
- Crop Science Society of America
- CAST
- Gamma Sigma Delta
- North Central Weed Science Society
- Sigma Xi
- Weed Science Society America
- Western Society of Weed Science

#### **Proud Sons**

The Millers raised two children, Jason, who now lives in Wamego, Kansas, and Eric, who lives in Laramie. The former is a crop consultant in Kansas and the latter is a financial adviser at Warren Federal Credit Union.

"I am very proud of everything my dad has accomplished over the years, and he has had a very long, illustrious career," says Eric. "Everyone I have ever talked to who has either worked with him or studied under him has had nothing but great things to say."

Miller received his bachelor's degree in agronomy at CSU in 1968; a master's in agronomy at North Dakota State University (NDSU) in 1970; and a Ph.D. in agronomy at NDSU in 1973. His thesis investigated "Post emergence wild oat control with Trialate."

Then, Miller spent the next 12 years on the NDSU faculty before he started work at UW in 1987. Miller says he came to UW because of Harold Alley, a preeminent weed scientist on the UW faculty.

"Harold was thinking of retiring," says Miller, "and so when I talked to him he indicated that there was a position available. I applied for it and got it and within six months Harold retired."

#### **Energetic Adviser**

During his career, Miller finished 65 graduate students at UW and NDSU – 39 master's and 26 Ph.D. students. He says

LIFETIME ACHIEVEMENT

# WEEKEND



Professor Emeritus Stephen D. Miller

all made and continue to make significant contributions to weed science.

"My biggest enjoyment teaching at UW was working with graduate students and making them productive weed scientists," says Miller.

He became director of the Wyoming Agricultural Experiment Station in 2005 after Jim Jacobs, the former director, retired. The Wyoming Agricultural Experiment Station

#### Advice for students interested in weed science

"UW is a very good institution and, if you're interested in weed science, it's still got one of the finest programs," says Miller. "Andrew Kniss, assistant professor in plant sciences, has a great program. There will always be a job in weed science. I've completed 65 students in my career, and every one is still working and actively involved in weed science." serves as the research arm for the College of Agriculture and Natural Resources. The office administers two internal grants programs plus provides administrative oversight for the college's four research and extension centers.

Initially, Miller was not keen on the position.

"I hemmed and hawed for a long time but finally took it and said I'd do it for five years," says Miller. "My career goal was never to become an administrator – it was to be a weed scientist, but I did step in when the need arose."

#### **Appreciates Demeanor**

Miller mentored and ultimately hired his assistant, Bret Hess, at the time a professor in the Department of Animal Science, who became director following Miller's retirement.

"I have always appreciated Steve for being clear and deliberate in his decision making and for his ability to have frank discussions about virtually any issue," says Hess. "His demeanor is such that it does not take long to know where he stands on a particular issue, yet he is a tremendously kind and compassionate individual. He is a very unique person because he truly cares."

Miller, who retired in 2010, says getting the Lifetime Achievement Award was unexpected.

"I was shocked when Dean Galey called and asked if I would be willing to accept the award," says Miller. "I said there's got to be more qualified candidates than me."

Eric wasn't surprised.

"He was probably the hardest working person I have ever known and has definitely helped instill great work ethics and made me the hard worker that I am today."



### BP America receives Outstanding Research Partner Award

BP America has been presented this year's Outstanding Research Partner Award for its support of reclamation research and its funding for the Wyoming Reclamation and Restoration Center (WRRC) housed in the college.

"BP is very proud to receive this award and to have a great partner like the College of Agriculture and Natural Resources in our reclamation efforts," says Chad Calvert, director, government and public affairs for the Rocky Mountain region.

"Getting reclamation right is good business. It's good for the land, it's good for the ranchers, it's good for us, and it's good for the state of Wyoming."

Professor Pete Stahl is WRRC director.

"These guys have been our biggest supporters of the goals of the WRRC and have really led the way as far as gaining industry support for the center," he says. "They've been really good about providing field research sites for a number of research questions."

The funding has paid for several projects with the WRRC to identify effective and timely reclamation practices.

"Our thanks go to the university for their ongoing investment in the WRRC and to Dean Frank Galey and Pete Stahl for their vision and commitment," says Calvert. "BP will continue our work with the center to help make UW the center of excellence for reclamation science."



# AG APPRECIATION Outstanding alum leverages agricultural

Microbiology, soil graduate work at UW solid foundation for biothreat remediation

Kennedy Gauger strode through the doorways of the College of Agriculture and Natural Resources seeking a master's in microbiology and left in 1981 with a Ph.D.

He'll return this September with outstanding alumni award nominators crediting him with making the world a safer place.

Gauger's academic focus had been bioremediation to destroy environmental pollutants, but 9/11 pushed him in another direction.

"The events of 9/11 and the subsequent threat of the anthrax letters later the same fall had a profound effect on my career," says Gauger, principal scientist in the Department of Chemical Engineering at Southwest Research Institute in San Antonio, Texas.

The Boulder native would use his experience in environmental microbiology and soil science to find and control biothreat agents due to terrorism or through natural presences. He's spent the last 17 years as a technical consultant to the U.S. government defense community.

#### A Safer Place

Gauger's understanding of the science related to biological threats has been instrumental in improving the nation's ability to respond to these threats in the hands of those intent on harming us, says Michael Regester, vice president of Signature Science, LLC, in his nomination letter.

"In many ways, he also contributed to the safety of the world as a whole," says Regester. "I have witnessed the impact he has had in protecting our nation and its resources, specifically as it relates to the prevention of risk to human, animal, and agricultural health. His professional life has



Kennedy Gauger

encompassed nearly all forms of how a scientist can contribute one's skills to society."

High praise for anyone.

Gauger received his bachelor's degree in biology from Yankton College in Yankton, South Dakota, before enrolling in the college of agriculture at UW. He and agriculture have been companions since.

Discoveries that led to the development of antibiotics originally intrigued him – those and the ways microorganisms are part of our lives led him to study microbiology as a graduate student.

"I was most interested in programs that taught applied microbiology and that had a strong emphasis in hands-on education such as that learned in the laboratory," Gauger notes. "The University of Wyoming College of Agriculture had such a program. For me, it was a straightforward decision to apply to graduate school in Laramie because of the microbiology department's teaching approach, their curriculum, and the responsibilities that were afforded to us as teaching assistants."

#### **Every Course Exciting**

He says every course was exciting – not that they were easy, but because there was so much interesting science to learn.

Gauger never lost interest.

"I never wondered why the information that was being presented was being taught. All of it was relevant," he says. "I give credit to the excellent faculty members and their commitment to undergraduate and graduate student education and research. I also enjoyed the friendship extended by other students and technicians and the shared support as we worked together to advance our educations. To this day, I don't think I could have chosen a better place to go for my graduate education."

While working on his thesis, he applied for and received a job in the soils testing laboratory. The job would prove fortuitous in later years.

"I had a good chemistry background from undergraduate school, so I was able to understand the chemistry," he says. "However, I needed to work hard to learn soil science, which I did. This opportunity was one that significantly shaped my background and understanding of agriculture."

Professor Stephen Williams was a newly minted Ph.D. when he arrived at UW and

OUTSTANDING ALUMNI

# WEEKEND education, opportunities

Gauger was running the laboratory. Williams became Gauger's adviser.

Pedagogy is a two-way street, says Williams.

"As a faculty member, I learn as much from my students as they learn from me. With Kennedy, he and I stumbled on a synergy of interaction where we both learned a lot. But the reality is, I learned so much more from him than he ever from me."

One of Gauger's most enduring attitudes was passion, says Williams "It included maintaining a positive attitude, keeping a proper and often humorous perspective on what we do and on the human condition, and recognizing opportunity even in the face of catastrophe and sometimes danger."

#### Ag Experience Proves Fortuitous

Gauger studied different soils topics and learned soil science as a whole.

"At the time, little did I know how important that knowledge would help me later in my career," he notes. "I have applied much of what I learned then to understand the behavior of soil bacteria such as *Bacillus anthracis*, the causative bacterium of the disease, anthrax. I have worked extensively with *Bacillus thuringiensis* (*Bt*) used as a biopesticide and as a simulant for *B. anthracis*. I have traveled to numerous facilities that produce *Bt* and learned about the industrial production in massive fermentors (20,000 liters and larger) and the processes for harvesting

#### WHY STUDY AGRICULTURE?

"When I was a student and professor in agriculture, I had no immediate idea how this background would play into the many areas that it has during my career," says Kennedy Gauger.

"Initially, I was driven by areas of science that were practical and interesting. I have always been focused on applied microbiology and agriculture," he notes. "Although I recognize that science for the sake of science has its place and must be part of our society's progress, agricultural science has always had the "applied" aspect that I have found motivating.

"Agriculture has been "global" much longer than some of the other intellectual endeavors in our society. Mechanized agriculture has facilitated the feeding of many people unable to feed themselves well beyond the borders of the U.S. We produce massive volumes of grain and ship them overseas for others to use. Some of these grains are used to feed livestock; other grain, such as soybeans, is used as a feedstock for fermentation to produce foods such as tofu, tempeh, miso, and soy sauce. There are many others, and these products provide protein in the diets of people who would otherwise get insufficient protein in their diets. This example of agricultural grain production provides products that come back to the U.S. and that are distributed across the globe. "

Similar examples can be found in the form of other leguminous crops, he says. "Other things are global such as some of the microorganisms that cause disease in livestock and other animals. As an industrial country, we have the capability and, at some level, the obligation to learn how to manage or eliminate these diseases." He managed a multiyear, multimillion-dollar project to validate collection and analytical techniques for identifying telltale signatures of potential biological warfare production. This validation was done at more than 60 real-world production facilities. Based on his expertise and experience, he was chosen to train government officials, such as Iraq Survey Group detachments, in the use of these collecting technologies, which were used in the war zone.

> Michael MacNaughton, vice president, chemistry and chemical engineering, Southwest Research Institute

(continuous centrifugation and ultrafiltration) to obtain the *Bt*. "

Much of the biothreat agent work involved soil sampling – a skill learned in agriculture.

"I have trained many others, scientists, students, and nonscientists (e.g., law enforcement officers) on how to properly collect soil samples without causing cross contamination," he says. "On numerous occasions, I have needed to have soil samples chemically and physically characterized for work related to bioremediation as well as biothreat agents. Had I not gone to an agricultural higher education institution, I likely would not have had the experience needed to acquire these skills and to be able to make critical project decisions later on."

Gauger would become an assistant then associate professor of microbiology at South Dakota State University in Brookings, and then he went to work for private firms.

#### **Leads Multimillion Dollar Projects**

Gauger has trained personnel and has overseen multi-million dollar projects, both in the continental United States and outside the country. One such project was the mitigation of pathogenic organisms at Vozrozhdeniya Island or "Resurrection Island" in the Aral Sea near Uzbekistan. The site was used by the former Soviet Union to develop and test biological weapons.

"Most of my success has been the result of being presented with an opportunity and not being too afraid to pursue it," Gauger says. "In cases where I worked directly with biothreat agents, or there was a concern for exposure, I obtained the immunizations necessary to protect myself should there be an unplanned exposure. Also, we always used well-defined biosafety practices prior to going to any of these locations or entering production facilities. Often, this was a requirement of a host facility so it ended up being part of the job. This always ended up being a personal choice. No one who was presented the opportunity was coerced into receiving an immunization."

Opportunities built upon one another, and coincidence and education advanced his career.

Project management responsibilities resulted from his experience. He had worked on a project in the U.S. that involved collecting biological field samples from a variety of locations for a number of different purposes ranging to validating newly developed analytical methods, collecting a variety of different types of samples – wastewater, surface water, soil, air – and sampling from different aspects of industrial microbiological processes.

"It was a complicated project, but I had skills in all aspects of the project and managed a wide variety of staff," he notes. "I also worked directly with the primary client and the client's clients. I like people and came to clearly understand client needs and expectations. It was a lot of fun but not something I envisioned that I would be doing when I was in graduate school. By progressing in my career, I became ready for this new and challenging opportunity."

#### **Never Stop Learning**

Twenty-one years later, he still credits education.

"I was deliberate in seeking programs that would provide me hands-on and academic preparation," he says. "When I left UW, I went to South Dakota State University and had my own microbiology program in the College of Agriculture that started my experience in industrial microbiology, which provided skills relevant later in my career. One can never stop learning. However, the easiest way to keep learning is to always retain one's curiosity and enthusiasm so the work continues to be of interest."

## Morrill Act, Lincoln's

Anyone administering vaccine to livestock, applying economics to an agricultural operation, enrolled in a 4-H project, or even taking a class final at a land-grant university, is a direct beneficiary of a president's hand 150 years ago.

President Lincoln signed the Morrill Act during the terrible and turbulent Civil War. An action that, like keeping the union intact and abolition of slavery, elevated generations.

Justin Morrill, a farmer and businessman in Vermont, believed every state should have a land-grant university to benefit agriculture but also to provide a means for an affordable college education.

University educations were no longer only for the rich or well connected.

"If one aspires to help other people and derive satisfaction from that, I can think of no other way than to obtain an education at a land-grant university," says Kennedy Gauger, one of two recipients of this year's Outstanding Alumni Award from the college.

The Morrill Act was the greatest promotion of production agriculture and the agriculture industry, says Gary Darnall, owner/operator of a feedlot north of Kimball, Nebraska, and a former outstanding alumni award recipient of the college. "The research, discoveries, and the systems of the land-grant universities have made the U.S. the world leader of agriculture."

Wyoming Governor Francis E. Warren signed the bill in 1886 establishing the University of Wyoming. Classes began September 6, 1887, and the College of Agriculture and the Agricultural Experiment Station were established in 1891. Two students received diplomas that year in the first UW commencement. The first graduate degrees were awarded in 1898.

"The land-grant system of education provided education for people who might not otherwise have obtained it," Gauger says. "Because it was directed toward agriculture and engineering, it led to the advancement of technology in those areas."

## signing revolutionized universities in America

As an example, Gauger says coupling GPS in farm equipment with an understanding of the economics of farming – all taught at land-grant schools – provides the following:

- High technology applied to farming more efficiently; in planting seeds as well as harvesting crops.
- Application of crops and associated chemicals in ways that reduce overapplication of chemicals and optimize yields.
- Use of satellite imagery to determine where to plant and where not to plant and to map soils around the world.
- Educating those who traditionally worked the family farm. Because of this education, they have been able to bring innovation and applied science.

"The ultimate benefit is that this has led to U.S. leadership in agriculture and the feeding of lesser developed countries," notes Gauger.

Darnall appreciates the advancements.





Head lettuce. Agronomy Farm, Wyoming Experiment Station. July 17, 1923

"Since graduating from the University of Wyoming, this is the most exciting time for me in production agriculture because of the technology, knowledge, and tools we have available thanks to the land-grand college systems," says Darnall.

#### CONNECTING WITH JUSTIN MORRILL

Justin S. Morrill P22 Ann contects The family of one of this year's Outstanding Alumni Award recipients had a land connection to Justin Morrill.

"My maternal grandmother's family purchased a home that was part of Rep. Justin Smith Morrill's estate in South Strafford, Vermont," says Kennedy Gauger, who graduated with a Ph.D. from the college in 1981. "What is not clear to me is when in my family's history the purchase was made. It may have been during my greatgrandparent's generation." "The land-grant system of education provided education for people who might not otherwise have obtained it. Because it was directed toward agriculture and engineering, it led to the advancement of technology in those areas." — Kennedy Gauger

Outstanding Alumni Award Recipient College of Agriculture and Natural Resources

## PROGRAM NOTES

#### Agricultural and Applied Economics

Undergraduate students have historically chosen between three specialized options within the bachelor of science program in agricultural business: agribusiness management, farm and ranch management, and international agriculture.

The new, fourth option, livestock business management, is being offered this fall and provides students with a balanced set of skills in the biology and business of livestock production, says Associate Professor **Dannele Peck**.

Students take about 24 credits of upper-division coursework in agricultural business and 24 credits of upper-division coursework in livestock production.

Students who complete a particular set of livestock production courses can earn an animal science minor. Alternatively, students can substitute roughly 12 credits of rangeland and watershed management courses for certain animal science and biology courses. "Although this alternative will not necessarily lead to a minor, it will enable students to tailor their productionrelated coursework to a particular sector of the livestock industry or to special career goals," Peck says.

The purpose in developing this new option is to prepare agricultural business students for a broader set of jobs across the livestock industry, including, but not limited to, the farm/ranch sector. "By providing students with knowledge in both agricultural business and livestock biology



Associate Professor Dannele Peck

(in addition to general communication and analytical skills), we believe they will have more diverse employment opportunities upon graduation, and greater flexibility and promotion potential during their careers," she says.

#### **Animal Science**

Assistant lecturer and UW Extension equine specialist Amy McLean and four of her students were awarded a grant from the American Quarter Horse Association (AQHA) to administer international horsemanship clinics this summer. The undergraduate students assisting in the administration of these clinics in Spain, Sweden, England, and Ireland include Lacey Teigen and Corinna Slingerland from Laramie; Lindsey Hankins from Fort Collins, Colorado; and Katelynn Ewing from Sidney, Nebraska. Lindsay Doel, a collaborator in the United Kingdom, complimented McLean and the students on their organization abilities, knowledge, and ability to work with a wide range of "camper"

abilities. "Doel expressed appreciation to the AQHA for supporting the program and commented that all of the universities they've worked with over the years have been very good, but that the University of Wyoming's group proved to be exceptional," says Professor **Doug Hixon**, head of the department.

The department's Academic Quadrathlon (AQ) Team competed in the Western Section, American Society of Animal Science regional competition in Tucson, Arizona. Teams are scored on a written exam, a lab practicum, an oral presentation, and a quiz bowl. Team members included animal and veterinary science majors Lauren Schiermiester from Buffalo; Keah Brost Cross from Morrill, Nebraska; Becky Vraspir from Emerson, Nebraska; and Dexter Tomczak from Longmont, Colorado. "This exceptional group of young people placed second in the overall ranking out of the six institutions competing in this regional event," says Hixon. Professor Dan Rule serves as the coordinator of UW's AQ program.

The department sponsors competitive undergraduate team experiences in livestock, meat, and horse judging. The department believes these experiences add a unique dimension to the education of students who participate, says Hixon.

"First and foremost, students are able to develop their ability to critically evaluate information and make decisions as well as to develop their written



Equine Specialist Amy McLean

and oral communication skills," he notes. "These are all traits that contribute to desired student learning outcomes. It certainly requires a time commitment on the student's part but in return they receive the opportunity to travel to regional and national contests while meeting industry leaders and developing contacts that will benefit them for years to come."

Giving leadership to these judging activities include Lance Miller, livestock judging team coach and a program associate in the department; Zeb Gray, meat judging team coach and Ph.D. graduate student in the department; and McLean, who coaches the horse judging team. Current and prospective students are encouraged to contact the respective coaches of these teams and consider involvement in these extracurricular activities that further develop skills that are highly valued by perspective employers.



#### Ecosystem Science and Management

"The summer has been fairly quiet with our undergraduate students off at work, our graduate students in the field, the staff catching up on work and getting ready for the coming school year, and the faculty in the field and getting ready for classes," notes Professor John Tanaka, head of the department. "As I write this, Dave Williams, Amarina Wuenschel, Tony Perlinski, Vicky Zero, Gueneviere Jones, Kristie Maczko, and I are at the Ecological Society of America meetings in Portland, Oregon. ESM has a trade show booth there as well and are recruiting future graduate students and visiting with alumni."

Tom Thurow, Ann Hild, Melanie Murphy, Jim Waggoner, Jeff Beck, Larry Munn, Renee King, and Tanaka held a mini-retreat at the Elk Mountain Hotel this summer to review the undergraduate curriculum and to develop a plan for assessing writing across the curriculum. The retreat resulted in a series of recommendations that will be discussed by the full faculty.

"We have met with many new undergraduate students over the summer," notes Tanaka. "We expect that our numbers will remain about 120 students even though we had a very large graduating class last spring. We are also bringing in about 15 new graduate students and will start the year with about 60 students.

"As you will likely read elsewhere, **Scott Miller** was part of a group of faculty that received



Professor Dave Williams

a National Science Foundation grant to start a hydrology center at UW (story page 3). As part of that, there will be new faculty positions created in various departments and 10 graduate assistantships. Some of these may be in our department."

Kelli Belden, formerly in the department, and George Vance are retiring this summer. "We will miss them both," notes Tanaka. "We have been authorized to hire a new soil chemist and are moving forward to begin the process. Jay Norton will be heading up the search committee."

**Steve Williams** will be coordinating the Research Across Disciplines departmental seminar. Watch for announcements on the speakers each week.

#### Family and Consumer Sciences

Associate Professor Bruce Cameron has been elected president-elect for Phi Upsilon Omicron, the national honor society for family and consumer sciences, notes Professor Donna Brown, head of the department.

The first UW faculty member to serve in this capacity, Cameron will be officially installed during Conclave in October. He will serve as president-elect for 2012-2014 and assume the role of president in 2014. Founded in 1910, Phi Upsilon Omicron is a collegiate-focused honor society that nurtures student leaders to carry on the legacy of family and consumer sciences. Chapters are established via a petitioning process at accredited institutions across the country offering bachelor's degrees in family and consumer sciences. The Delta Chapter at UW - in Region 4 was the fourth such chapter and was approved in 1916-17. All collegiate chapters are assigned to geographic districts or regions. The regions have been adjusted over the years as changes have occurred within the honor society.

Jenna Hotovec, incoming junior in human development and family sciences, attended the American Association of Family and Consumer Sciences annual convention in Indianapolis in June where she did a poster presentation on her research "Parental influences on childhood obesity."

Family and consumer sciences graduate student **Kate Fantozzi** spent the summer as an intern for the Feeding Laramie Valley organization. Through this internship, she had the opportunity to work with Sharing the Bounty, an organization that helps bring food equality to the Laramie Valley. Each farmers market, the group collected local and fresh produce from vendors, customers, and home gardeners



Associate Professor Bruce Cameron

to redistribute to locations such as the Soup Kitchen, Interfaith Good Samaritan, and Laramie Senior Housing. In addition, Fantozzi worked with others in two production gardens in Laramie to contribute to these distribution sites.

Professor **Sonya Meyer** left the department at the end of July after 26 years at UW to take on the new role of department head of the Margaret Ritchie School of Family and Consumer Sciences at the University of Idaho in Moscow.

"We all wish her the greatest success in her new role and look forward to collaborations with her and the faculty members at her new institution," notes Brown.

#### **Molecular Biology**

Two faculty members join the department this fall – Assistant Professors **Jason Gigley**, an immunologist, and **Grant Bowman** a microbiologist, according to Associate Professor and department head **Mark Stayton**.

Associate Professor **Cynthia Weinig** was an invited speaker at

## PROGRAM NOTES

the University of Aberdeen Scotland in a meeting on plant ecological and evolutionary genomics. Postdoctoral Fellow Carolyn Rasmussen was selected to give a talk on plant ligule development at the American Society of Plant Biology meeting in Austin, Texas, in July. Assistant Professor Naomi Ward attended the 2012 Keystone Symposium on the Microbiome and presented the lab's work on the microbiome in Hirschsprung's disease. She visited the Department of Microbiology and Immunology at Dartmouth University to give a research seminar, and she spoke as a panelist at "Beyond the Hype: Teaching Critical Thinking in the 21st Century," a spring colloquium run by the UW Ellbogen Center for Teaching and Learning.

Professor **Anne Sylvester** serves as the principal investigator on the National Science Foundation EPSCoR award – \$20 million to UW for five years. Professors **David Fay**, **Mark Gomelsky**, **Don Jarvis**, **Hermann Schätzl**, and Assistant Professor **Dan Wall** each won or renewed National Institutes of Health funding during the last year with two NIH awards going to **Jay Gatlin**.

Ph.D. student **Dan Kirien**ko, postdoctoral researcher **Anding Luo,** and **Anne Sylvester** published a paper in *Plant Physiology* and were selected to provide the cover photograph for that issue of the journal. **Ward**, together with Harvard Medical School collaborator Allan Goldstein, published "Intestinal aganglionosis is associated with early and sustained disruption



Assistant Professor Naomi Ward

of the colonic microbiome" in *Neurogastroenterology and Motility*. In addition, **Ward**, with former postdoc **Blaire Steven** and former undergraduate researcher **Sage McCann**, published "Pyrosequencing of plastid 23S rRNA genes reveals diverse and dynamic cyanobacterial and algal populations in two eutrophic lakes" in FEMS *Microbiology Ecology*.

Ward and Assistant Professor Dan Levy conducted a oneweek professional development workshop in July for Wyoming high-school science teachers (as part of the NSF-supported GET Cell Biology Initiative), featuring hand-on research experiences and curriculum development, to help align Wyoming science curriculum to the new K-12 science education standards. Ward also served as organizer of the scientific program at the 56th Annual Wind River Conference on Prokaryotic Biology. She and Ward lab MCLS Ph.D. student Ekaterina Yarunova also presented research findings.

#### **Plant Sciences**

Redesigning living things has been a continuous human activity for well over 10,000 years, says **Steve Herbert**, associate professor and head of the department.

"The early domestication of plants by selective breeding created farming as we know it, and plant improvement by breeding and genetic modification continues today, greatly accelerated by the availability of plant genome data," he says.

Improvement of plants and photosynthetic microorganisms for human use is the research focus for a growing number of faculty members in plant sciences. Associate Professor Robin Groose is a highly experienced plant breeder who improves alfalfa and other forage legumes for the challenging production conditions in Wyoming. Assistant Professor Sadanand Dehkney, who recently arrived at the Sheridan Research and Extension Center, seeks to improve the coldand drought-tolerance of wine grapes by genetic modification of rootstocks that confer tolerance on the shoots to which they are grafted. Herbert is engaged in genetic modification of green algae to reduce the costs of producing them for fuel oils and other useful chemicals. Plant sciences is now preparing to add a small grains breeder to its plant improvement group. The position will be based at the James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle. Small grains, such as wheat, barley, and millet, are produced in several areas of Wyoming, and their production



Associate Professor Robin Groose

can be significantly improved by breeding for drought tolerance and other traits that reduce inputs while maintaining yield. "Wyoming growers use crops bred in adjacent states. Wyoming-bred varieties will be better adapted for good production under our conditions," notes Groose.

For as long as there has been agriculture, there have been weeds to control. Weed science is a traditional strength in the department, but some of that strength was lost this summer with the retirement of weed scientist Mark Ferrell after more than 35 years of service to UW. Most recently, Ferrell was responsible for training and certification of pesticide applicators across the state, providing the latest technical and regulatory knowledge to safely and effectively control weeds in range and pasture lands. "Mark was unassuming but highly respected by his extension clients, a very effective presenter of science-based information," says Herbert. "We're going to miss him."

In the earlier part of his UW career, **Ferrell** performed extensive research on control of leafy



spurge, a highly invasive weed that is problematic in Western rangelands. Ferrell's approach of incorporating ecological knowledge with targeted herbicide application was highly innovative at that time, an early example of ecologically based integrated pest management, says Herbert.

"Mark's work was 20 years ahead of its time," confirms weed scientist Assistant Professor **Andrew Kniss**.

#### **Veterinary Sciences**

The Department of Veterinary Sciences and Wyoming State Veterinary Laboratory (WSVL) maintains a veterinary externship program. The purpose is to provide veterinary students with advanced experience in diagnostic medicine, says Professor Will Laegreid, head of the department and WSVL director. Externs rotate through the laboratory sections, participate in all aspects of diagnostic investigations, and contribute in diagnostic rounds. This summer, the department hosted two veterinary externs, Vanessa Chen and Matt Hille. Vanessa is a third-year student from the University of California, Davis. Matt is a third-year student in the professional program in Veterinary Medicine between the University of Nebraska-Lincoln and Iowa State University. Matt was supported by the Kelly Palm Memorial Externship, established in honor of the late local veterinarian by her parents, Jerry and Peggy Palm, of Centennial.

"We are grateful for the opportunity to host these externs and further their training in vet-



erinary medicine," says Laegreid. **Carol Hearne** retired from

the WSVL this spring after more than 34 years of service at the University of Wyoming, much of that in the Wyoming State Veterinary Laboratory. Carol managed the diagnostic electron microscopy lab and was involved in establishing the cause of numerous livestock and companion animal disease problems across Wyoming. In addition, Carol assisted in the discovery and characterization of previously unknown viruses of wildlife and a number of research projects.

"We will miss Carol's energy and experience and wish her and her husband the best on their ranch," says Laegreid. "Taking over for Carol, we are happy to welcome **Megan Dillon**. Megan comes to us with extensive laboratory experience in the Pacific Northwest and will be a fine addition to our staff."

#### Agricultural Experiment Station

Big changes are in store for the University of Wyoming's research and extension center in Sheridan. The 2012 Wyoming Legislature allocated \$5.3 million for UW to purchase and renovate the Watt Agriculture Center on the Sheridan College campus and construct associated outbuildings.

The upgraded and expanded facility will place all of UW's agricultural and outreach programs in northern Wyoming under one roof. The facility will house the research and extension center, UW Outreach School, UW Extension, and Manufacturing-Works. Renovations are scheduled to be completed by fall 2013.

In April, the Agricultural Experiment Station (AES) completed a working draft of the Production Agriculture Research Priorities document. According to the document, AES' overarching goal of production agriculture research is to enhance the competitiveness, profitability, and sustainability of Wyoming agricultural systems. "A big thanks to all who provided input and assistance," says Bret Hess, AES director. The Production Agriculture Research Priorities document is available on the AES website at http://www.uwyo.edu/ uwexpstn. The document link is under Important Links on the left-hand side of the page.

AES also published the second edition of the Field Days Bulletin. "The main idea for the bulletins is to keep track of what we do at the research and extension centers and to



Associate Dean Bret Hess

have something to provide to farmers to take home for future reference," says **Axel Garcia y Garcia**, assistant professor and irrigation specialist at the Powell Research and Extension Center. "Contact information is also provided if they want to contact the researchers."

The Field Days Bulletin is also available on the AES website under Important Links at http:// www.uwyo.edu/uwexpstn.

AES enters fall with expectations of routine business in addition to continuing work on much of the aforementioned items, according to Hess.

"We are guaranteed to be immersed in planning renovations to the Watt Agriculture Center in Sheridan plus drafting a strategic plan for the Sheridan Research and Extension Center," he says.

AES will also begin seeking input and drafting a research priorities document for specialty crops/ niche markets and agricultural products/local foods in Wyoming, and exploring ways to increase the utility of the Field Days Bulletin will be a priority as the field day season ends, says Hess.

## PROGRAM NOTES

Hess adds that AES also plans in the next year to develop more "ships," a term the chair of the Powell Research and Extension Center Advisory Board, **Kelly Spiering**, used in reference to encouraging UW to connect to the state's citizens and vice versa – friendships, relationships, and partnerships.

#### **UW** Extension

**Brandon Greet** joined UW Extension September 10 as Northwest Area educator based in Washakie County. Greet will serve Park, Big Horn, Washakie, Hot Springs, and Fremont counties and the Wind River Indian Reservation as educator for profitable and sustainable agriculture systems; his emphasis will be on crop systems, small-acreage management, and horticulture.

Greet, a native of Ten Sleep, was raised on his family's ranch. He earned a bachelor's degree in agroecology with a minor in animal science at UW in 2011 then received his master's in agronomy at UW in 2012.

Greet served as an Ag Ambassador for the College of Agriculture and Natural Resources, which enabled him to represent the college at numerous events and in recruitment activities.

**Cathleen Craig**, a native of Lovell, took over the 4-H educator position in Carbon County in July. Craig, who lives in Encampment, has worked for the UW Extension office in Carbon County since 2007 as administrative assistant. She received a bachelor's degree in psychology from UW in 1997.



Brandon Greet



Cathy Craig



Jeff Edwards, a native of Riverton, has taken over the positions of state pesticide applicator training coordinator and state small acreage-horticulture specialist following the June 30 retirement of Mark Ferrell; Ferrell had been the pesticide applicator training coordinator for 28 years.

Edwards will be based at the James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle; he will coordinate statewide pesticide applicator training and collaborate closely with the Wyoming Department of Agriculture and the U.S. Environmental Protection Agency.

Edwards has been with UW Extension since October 2008, serving as the Southeast Area profitable and sustainable agriculture



Jeff Edwards

educator with emphasis on crop systems and based in Goshen County.

Edwards has a bachelor's degree in entomology from UW and a master's in entomology from Texas A&M University. Prior to joining UW Extension, he spent more than 15 years working for Dow AgroSciences in sales and research positions.

#### Academic and Student Programs

The Office of Academic and Student Programs will launch the Student Engagement and Networking Drive (SEND) grant program this fall. According to **Jim Wangberg**, associate dean and director, SEND will help support undergraduate students' travel to professional conferences, society meetings, and other venues where students may engage with people within the agricultural and natural resources professions.

SEND has gained significant financial support from the Ellbogen Foundation, the Wyoming Natural Resources Conservation Service, and from individual donors comprised of alumni, the advisory board, and the Office of Academic and Student Programs.

Wangberg notes that SEND will fill an important void because academic departmental budgets have been inadequate in meeting students' requests for professional travel and networking.

SEND will also enable students to present papers or posters at regional and national scientific meetings, to participate in professional society affairs, and to network with other students and professionals in their chosen fields of study.

Program funds may also supplement student internships, hands-on experiences outside of the classroom, and other similar opportunities.

The following are examples of student activities a SEND grant would allow an undergraduate student to do: present a research paper at regional or scientific meetings; network with other students and professionals at society conferences; seek internship and career informa-



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Associate Dean Jim Wangberg

tion and initiate steps toward a career in agriculture and natural resources; supplement the costs of summer internships; participate in USDA-sponsored events in which student participation is encouraged; volunteer when students are sought to serve as representatives on society or professional agency committees or task forces; and travel with student organizations or clubs that network with universities.

A call for proposals will be sent to students early in the fall semester to be followed by a second call in the spring semester with the hope of meeting student travel needs throughout the academic year.

#### **College Relations**

The year 2012 marks the 150th anniversary of the Morrill Act, which created the land-grant university system. The equally important Hatch Act of 1887 created a nationwide system of state agricultural experiment stations, which greatly benefitted the University of Wyoming.

When the Wyoming Territorial Prison closed in 1903, UW acquired the property and instituted the old UW stock farm where crop and animalrelated classes and research were conducted until 1989.

Last May, the Wyoming Territorial Prison State Historic Site opened the new permanent Science on the Range exhibit in the site's century-old horse barn, which commemorates the history of the UW experiment station (1903-1989) and includes numerous historic photographs. The site is open daily until October 31. Exhibit Curator Misty Stoll continues to search for artifacts including ribbons, trophies, memorabilia, or photos of events at the farm from 1903-1989, especially photos from inside the early horse barn.

Stoll would like to speak with alumni about their experiences at the old UW stock farm or discuss related artifacts you may wish to donate. Contact Stoll at Misty.Stoll@wyo.gov or by calling (307) 745-3302. Learn more about UW's four agricultural experiment stations at http://www.uwyo.edu/uwexpstn.

The college has a new representative – **Cowboy Joe V**, a brown and white Shetland pony. Cowboy Joe V is learning the ropes from **Cowboy Joe IV** at events this summer, including the Wyoming State Fair and Rodeo and Cheyenne Frontier Days.

According to the handlers, the biggest discussion was how to acclimate him to the cannon fire that follows every UW Cowboy touchdown, which can be often, as alumni know.



Director of College Relations Anne Leonard

Three new UW students will join veteran handler **Kendra Wilson** in escorting Cowboy Joe V to events. They are **Allyson Zinke** from Lakewood, Colorado, **Laura Schuman** from Gillette, and **Zach Stamp** from Longmont, Colorado.

Cowboy Joe V, like all his predecessors, is a gift from the Farthing Ranch of Iron Mountain, Wyoming. **Carol** and **Charles Farthing** continue the tradition started by **Charlie and Maude Farthing** in the 1950s.



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### HIXON RECEIVES DISTINGUISHED SERVICE AWARD FROM WESTERN SECTION, AMERICAN SOCIETY OF ANIMAL SCIENCE

The head of the Department of Animal Science received the Distinguished Service Award from the Western Section, American Society of Animal Science.

Professor Doug Hixon was presented the award in July during the society's convention in Phoenix, Arizona.

"Certainly a person is grateful for this type of recognition," says Hixon, who joined UW in 1982. "I was very humbled and very appreciative that someone thinks what you've done has had an impact since it encompasses one's entire career. At this stage of one's career, it's not so much about what you've done or haven't done but the relationships that you've built over your career that are special."

Hixon, a native of Donovan, Illinois, has been a nationally respected leader in bringing animal science research to cattle producers, says Jim Magagna, executive vice president of the Wyoming Stock Growers Association.

"As a respected teacher, he has played a critical role in preparing the next generation of agricultural industry producers and leaders," he says.

Hixon earned his bachelor's and master's degrees and his Ph.D. in animal science at the University of Illinois. He joined the UW animal science faculty in 1982.



Professor Doug Hixon

"It was an opportunity to learn about the beef industry in a range environment," he recalls. "This gave me a different perspective, and we thought Laramie would be a great place to raise a family since we had a young family at the time." Hixon was named the department head of animal science in 2001; he oversees an integrated program in teaching, research, and extension.

"UW has been fortunate to have had a string of talented and respected animal science professors over the years," says Magagna. "Doug ranks at the top with them. Most importantly, as a professor and in particular as department head, he has strengthened the bond between the College of Agriculture and Natural Resources and the ranching industry in Wyoming."