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N COLLEGE OF AGRICULTURE

Dear Friends and Colleagues,

As I traveled the state this summer, it was obvious last year was but a brief respite in a seven-year drought in much of Wyoming. Proper planning and adequate information is the best defense against droughts we face. You may wish to visit our Drought Information Web site at http://uwadmnweb.uwyo. edu/UWCES/Drought.asp. Stock growers may find more discussion of this from my column in the summer issue of *CowCountry* from the Wyoming Stock Growers Association (WSGA). The issue came out in August, and copies can be obtained by calling the WSGA at (307) 638-3942.

On a brighter note, one of my privileges as dean of your College of Agriculture is to recognize and honor each fall those who have helped the college.

The Mead family truly meets the definition of the college's Legacy Award, which recognizes those who have provided meaningful and lasting support for the college. The Meads are fourth-generation ranchers in Wyoming. Pete, Matt, Brad, Muffy Mead-Ferro, and their families have continued Cliff and Martha Hansen's legacy of support for this college. They helped with the establishment of the Cliff and Martha Hansen Live-stock Teaching Arena and the Mary Mead Educational Wing. More recently, the family endowed the Mary Hansen Mead Scholarship for Women in Agriculture to support one or more outstanding young women in agriculture. This scholarship is named in memory of Pete's late wife, Mary – mother of Matt, Brad, and Muffy, and daughter of Cliff and Martha Hansen.



Dean Frank Galey

Outstanding alum Jerry Rankin received his bachelor's degree in animal science in 1962. He began his career as an agricultural lending supervisor for the U.S. Department of Agriculture's Farmers Home Administration in Sheridan. He then managed large

ranch operations and later moved back into banking. He is the chief operating officer and vice chairman of the board of The Jackson State Bank and Trust.

Our other outstanding alum is Blair Wolfley. Blair received his bachelor's and master's degrees from UW in ag business and ag economics, respectively. Most of his career has been with Washington State University (WSU) Extension. He now manages 11 counties for WSU Extension and the Vancouver Research and Extension Unit.

Our outstanding research partner is Bayer CropScience, which has worked with the college's Department of Plant Sciences research programs for more than 25 years. Research supported in part by this partnership has led to development of the micro-rate system of weed control and trials to control rangeland weeds.

You will be able to read more about our honorees in this quarter's *Ag News*. Other stories include new facilities at the Sustainable Agriculture Research and Extension Center near Lingle, a new endowment to support veterinary student externs, the Wyoming State Veterinary Laboratory's response to the canine influenza outbreak in Cheyenne, two new faculty members in the Department of Agricultural and Applied Economics, and our new state-of-the-art computer

marketing modeling laboratory in the department.

Thank you for your support. Please stay in touch with your College of Agriculture!

Dean Frank Galey College of Agriculture

"Any person who contributes to prosperity must prosper in turn."

Earl Nightingale

UNIVERSITY

OF WYOMING

FIRST CUT

Two UW graduates fill new wildlifelivestock positions

Two University of Wyoming graduates have filled new wildlife-livestock faculty positions in the Department of Agricultural and Applied Economics.

Ben Rashford and Dannele Peck, who both earned bachelor's and master's degrees from UW, were hired as assistant professors and started in August.

"They will focus on anything dealing with livestock production and wildlife," says Roger Coupal, associate professor and interim department head. "We'll be reaching out to new clientele on issues that are truly Wyoming- and Rocky Mountain-based, and we'll be reaching out to traditional clientele but asking them different questions."

Coupal adds, "When you look across the state, I think you can start seeing all kinds of issues relating to private land and wildlife."

He says many issues affect both livestock/private lands and wildlife including such things as predation (wolves and grizzly bears),



University of Wyoming graduates Dannele Peck and Ben Rashford have filled new wildlife-livestock faculty positions in the Department of Agricultural and Applied Economics.

animal health (brucellosis), the Endangered Species Act (Preble's meadow jumping mice and prairie dogs), hunting, and landowner habitat conservation strategies.

"A lot of their work will be outreach and research related. We believe the state will find both positions very useful," Coupal says.

Rashford will split the majority of his time between extension and research but will also teach. Peck has a teaching and research assignment.

Peck says, "We both look forward to sharing our enthusiasm for economics with students. We hope to inspire them to think critically and creatively about western issues."

Rashford notes he looks forward to assisting

extension clientele who face complex decisions related to natural resources and the environment.

Peck adds, "I hope my agricultural roots and undergraduate training in wildlife biology will facilitate multi-disciplinary collaboration that addresses the state's wildlife and livestock issues."

Peck was raised on a dairy farm in upstate New York and earned a bachelor's degree in wildlife biology and a master's in agricultural economics at UW.

She will graduate this fall from Oregon State University (OSU) with a doctorate in agricultural and resource economics. Her thesis focuses on optimal drought preparedness and response in irrigated agriculture.

Rashford graduated this summer from OSU with a doctorate in agricultural and resource economics. His dissertation examined the design of cost-effective wildlife management on agricultural land.

He grew up in upstate New York and earned bachelor's and master's degrees in economics at UW. Coupal says both faculty members will work in collaboration with other departments in the College of Agriculture and across campus.

WSVL attempting to isolate canine influenza virus

Canine influenza was on the move this year in the Cheyenne area, and the Wyoming State Veterinary Laboratory (WSVL) became heavily involved in confirming the extent of the outbreak.

The virus appeared at the Cheyenne Animal Shelter in June. The outbreak resulted in the euthanasia of a large number of dogs, but approximately 20 dogs were saved, says Donal O'Toole, head of the Department of Veterinary Sciences and director of the WSVL.

Assistant Professor Nicky Bratanich, who joined the department earlier this year as the WSVL's virologist, her chief technician, Jackie Cavender, and other personnel in the laboratory tested the surviving animals to see how many were infected.

"Most were, and Dr. Bratanich's laboratory is

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currently attempting to isolate the virus," O'Toole says. "Isolates of the virus are needed to develop vaccines and laboratory reagents, and as challenge strains to confirm that new vaccines are effective."

Several companies contacted the WSVL once they heard of the Cheyenne outbreak, he notes.

Bratanich's laboratory is putting in place additional assays for canine influenza, including a blood test, which will make it easier and cheaper to screen large numbers of dogs. To do this, she needed access to a regular supply of fresh blood from turkeys.

"She is now the proud, if somewhat reluctant, owner of a small flock of



Assistant Professor Nicky Bratanich and her colleagues at the Wyoming State Veterinary Laboratory became heavily involved in confirming the extent of an outbreak of canine influenza earlier this year in the Cheyenne area. turkeys, which are serving as blood donors," O'Toole says.

He emphasizes it is likely canine influenza is here to stay but notes the Cheyenne outbreak was controlled in the short term by the shelter's controversial decision to euthanize many of the dogs. Several privately owned dogs in the city also contracted the disease, and some died.

"One of the veterinarians in Cheyenne, Dr. Mike Driscoll, was very helpful in repeatedly sampling dogs that recovered so the WSVL could have 'gold standard' positive blood samples to use in the event the disease becomes widespread," O'Toole says.

Canine influenza is a new disease that emerged in Florida two years ago.

"This was a strain of equine influenza virus that underwent mutation, allowing it to infect dogs. Most dogs recover, but a small proportion (less than 5 percent) may die. The mutated virus was probably transmitted through the practice of feeding horse carcasses to greyhounds," O'Toole says.

The disease appeared to move across the coun-

try via the greyhound dog industry and then via the shelter dog population, he reports.

Head of molecular biology gives keynote address

Jordanka Zlatanova, professor and head of the Department of Molecular Biology, gave the keynote address at the Chromosomes at the Nano-Era international meeting in Tokyo in March.

The conference brought together physicists, biologists, mathematicians, computer scientists, bioinformaticists, and researchers from related fields trying to unravel chromatin structure in chromosomes.

Zlatanova presented "Chromatin Dynamics Studied by Single-Molecule Approaches."

"This is a lot of prestige for the University of Wyoming," she says. "I was the only speaker from the States at the conference."

Chromatin is the portion of the cell nucleus that contains all of the DNA of the nucleus in animal or plant cells. When a cell divides, chromatin compacts in distinct chromosomes that duplicate, and then separate,



Professor Jordanka Zlatanova

with an equal part of each set of chromosomes traveling to each new cell. Six years ago, the Japanese government provided money for a consortium to use state-ofthe-art technology to study chromosomal dynamics at the molecular level.

Zlatanova's department utilizes instruments that allow researchers to look at the fluorescence of individual molecules.

"This was unheard of five years ago," says Zlatanova. "We look at each individual molecule as part of the complex and how they interact with each other.

"The structure of chromosomes is something we must understand," she says. Zlatanova predicts whoever resolves the structure will receive a Nobel Prize.

FIRST CUT

Department of Molecular Biology post-doctoral student Miroslav Tomschik accompanied Zlatanova to the meeting.

Zlatanova also presented a seminar about UW research to the Osaka University, Department of Biotechnology, Graduate School of Engineering, in Osaka, Japan.

UW will begin collaboration with Kiichi Fukui, professor in Osaka University's Laboratory of Dynamic Cell Biology in the Department of Biology, with an exchange of graduate and post-doctoral students.

Red Rim elk dieoff top story in UW Reflections magazine

Research into the deaths of more than 350 elk was ranked the top story for the University of Wyoming Agricultural Experiment Station (AES) research magazine *Reflections*, and its authors shared a \$1,000 award.

"Two years later... What killed the Red Rim elk?" was selected as the top submission by a review committee of College of Agriculture faculty and staff members.

The article details investigation into an estimated 350 animals, mostly cows and calves, that became paralyzed and died two years ago of either starvation, predation, or euthanasia after eating Xanthoparmelia chlorochroa, a free-living lichen common to many parts of the state. The die-off was on the Red Rim southwest of Rawlins. UW researchers, in collaboration with the Wyoming Game and Fish Department, determined usnic acid in the lichen was partly responsible for the deaths. They are now trying to determine what else was involved.

The article was written by Professor Merl Raisbeck, graduate student Rebecca Dailey, Associate Professor Donald Montgomery, Laboratory Technician II Roger Siemion, and Laboratory Technician I Marce Joseph Vasquez, of the Department of Veterinary Sciences; and Professor Emeritus James Ingram, Colorado State University, Fort Collins, Colorado.

Reflections is a color magazine published through the AES and is designed to showcase the College of Agriculture's teach-



Professor Merl Raisbeck

ing, research, and outreach programs.

The magazine is sent to all land-grant universities, major donors to the college, all graduates of the college, all advisory board members, and Wyoming legislators, and it is a handout at a number of college events. The magazine received a first place for news-related publications from the Wyoming Press Association in January and a first-place award last year and a second-place award this year from the national Association for Communication Excellence in Agriculture, Natural Resources, and Life and Human Sciences organization.

Students earn honors at Western Society of Crop Science conference

College of Agriculture graduate students received honors for their projects and rubbed shoulders with crop scientists from as far away as Australia and India at the Western Society of Crop Science (WSCS) meeting June 19-21 at the Sustainable Agriculture Research and Extension Center near Lingle.

The students are pursuing doctorate degrees in agronomy. Gustavo Sbatella placed second and received \$150 for his project "Jointed Goatgrass Seed Predation in Wheat/Fallow Systems."

Andrew Kniss and Calvin Odero both were fourth and received \$75. Kniss presented "Reduced Row-Spacing for Sugarbeet Production in Wyoming," and Odero presented "Interference of Venice Mallow and Wild Buckwheat in Sugarbeet."

WSCS members attended from Australia, India, Kenai, Korea, and Colorado, New Mexico, Nebraska, Kansas, Montana, Idaho, North Carolina, and Wyoming, according to Jim Krall, WSCS member and plant science professor in the Department of Plant Sciences.

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Research potential in livestock reproduction bolstered

Two new faculty members in the Department of Animal Science will bolster the department's research potential in livestock reproduction.

South Dakota native Kristi Cammack and Colorado native Brenda Alexander joined the department this semester as assistant professors.

Cammack brings expertise in statistics and quantitative and molecular genetics, says department head and Professor Doug Hixon.

"Dr. Cammack's research interest is to identify genes related to fertility under exposure to environmental stress with the goal of enhancing reproductive efficiency in livestock," Hixon says.

"Her abilities as a researcher have the potential to integrate well with current research initiatives in nutrition, reproductive biology, meat science and food technology, and livestock production systems."

She will also teach graduate and undergraduate courses.



Brenda Alexander

"Kristi indicates the most influential instructors in her career have been those who have the ability to mentor and inspire, and they are also accessible and compassionate," Hixon says.

She earned a doctorate from the University of Missouri.

Alexander brings considerable teaching and research to her position, Hixon says.

Since September 2004, Alexander has been a project leader for the National Institute of Health's IDeA Networks of Biomedical Research Excellence, working with Professor Bill Murdoch in the animal science department.

The focus of her research has been the development of an ovulating model for the study and prevention of ovarian cancer.



Kristi Cammack

"Brenda brings an enthusiastic approach to teaching that will further enhance our departmental teaching emphasis," says Hixon, who notes Alexander has either taught or assisted with numerous courses at UW.

She earned a doctorate in 1999 from the University of Wyoming's Department of Zoology and Physiology. Advised by Professor Jim Rose, her dissertation focused on the neurophysiological basis of male reproductive behavior in domestic rams.

Staff members receive recognition for service

Twelve staff members with the College of Agriculture were honored for their years of service and contributions to the University of Wyoming. They were among the more than 200 employees honored in March at staff recognition day ceremonies.

The agriculture college honorees include:

Thirty years – David Moore, farm manager, animal science.

Twenty-five years – Carol Hearne, laboratory technician III, veterinary sciences; Debbie McFaul, senior accounting associate, molecular biology.

Fifteen years – Norma Murphy, accounting associate, plant sciences.

Ten years – Shirley Augustin, senior accounting associate, Ag Business Office (ABO); Arlene Mascarenas, senior office assistant, plant sciences; Cindy Wood, senior accounting associate, renewable resources.

Five years - Cynthia Aguilar, UW Cooperative Extension Service (CES) Cent\$ible Nutrition Program (CNP) project coordinator, Washakie, Hot Springs counties; Mindy Braman, senior accounting associate, ABO; Gretchen Gasvoda-Kelso, CES CNP project coordinator, Big Horn County; Jennifer Hudson-Schaff, CES CNP project coordinator, Fremont County/Wind River Extension Area; Kelly Wiseman, staff assistant, academic and student programs.

New endowments expand wildlife-

by Robert Waggener, Editor Office of Communications and Technology

Two new endowments in the College of Agriculture will allow more veterinary students from other institutions to study wildlife and livestock diseases with faculty and staff members in the Department of Veterinary Sciences.

Before the funding became available, students paid for externships, and typically the program accommodated two to four externs a year.

"With the two endowments, we anticipate being able to support one or two more students a year," says Anne Leonard, director of the College of Agriculture's Ag Development and College Relations.

"I really think this is a unique program, one of only a handful in the country, at most," Leonard says.

Veterinary sciences Associate Professor Todd Cornish notes, "The externships expose students to diagnostic and fieldwork experience, both with wildlife and livestock diseases, that is unique anywhere in the United States."

One endowment was created by Barbara and Richard Powell, who raise Pinzgauer-Red Angus cross cattle near Brenham, Texas. Mrs. Powell spent her early childhood on a ranch near Lander, Wyoming, and graduated from the University of Wyoming's College of Education in 1963. One of the couple's children, Richard, graduated from the UW College of Agriculture with an ag business degree.

"They heard about our wildlife-livestock disease program, thought this was an important area of research and teaching, and contacted us to see how they could help," Leonard says.

Mr. Powell says bovine spongiform encephalopathy (BSE), also known as mad cow disease, was a major concern when he and his wife were trying to decide how to contribute to the College of Agriculture.

"We heard there might be similarities between BSE and chronic wasting disease (CWD)," Powell says. "When we read an article



Associate Professor Todd Cornish

in one of your publications about CWD, we thought a good place to spend our money was with the research associated with that disease and others that affect wildlife and livestock."

The other endowment was created by colleagues, family, and friends of Tom Thorne and Beth Williams, who died in a motor-vehicle crash in December 2004. The couple were internationally recognized wildlife disease veterinarians. Thorne worked for the Wyoming Game and Fish Department, and Williams was a professor in the Department of Veterinary Sciences.

Williams started the externship program in 1983 and, since then, approximately 45 third- and fourth-year veterinary students have participated.

Among the first to receive stipends through the new endowments was University of California-Davis (UC Davis) student Kelly Buckle, who studied CWD and brucellosis for a month last winter with the Department of Veterinary Sciences and Wyoming Game and Fish Department.

Her experiences were in the Wyoming State Veterinary Laboratory (WSVL), which is operated by the veterinary sciences department, and in the field near Glenrock, Pinedale, and Jackson.

"The externship made me question the value that wildlife has to me and the values that different state agencies set on wildlife," says Buckle, who graduated in June from UC Davis with a doctor of veterinary medicine degree. She is now working on a master's degree in preventative veterinary medicine with an emphasis in wildlife diseases from the same school.

"In the past, I viewed wildlife and wild lands as universally good things, and the more the better,"

livestock disease externships

Buckle says. "Now, I have been forced to confront issues like supplemental feeding (of elk) and the reality of diminished winter grounds for wildlife all over Wyoming and all over the West."

Before her externship, Buckle says she questioned the trend in conservation toward increased hands-on management of wildlife.

"My instinct is to prefer unmanaged populations of wildlife kept in check by habitat resources and natural predators. Even in relatively people-sparse Wyoming, however, the idea of unmanaged wildlife is a pipedream, and complex issues cannot be solved simply."

Buckle adds, "It was a pleasure to work at the WSVL and to see how these complex issues can nevertheless be explored and investigated, and that the resulting science has the potential to improve our management of wildlife populations and disease."

Leonard says students are able to work one-onone with faculty and staff members at the WSVL. "This program helps train the next generation of wildlife-livestock disease veterinarians and biologists," Leonard says. "These two new funds allow the college to provide stipends to students who want to pursue careers in this area."

College of Agriculture Dean Frank Galey thanked both families for their support of the program.

"Their contributions will make a marked impact on the veterinary sciences department, and the program is a huge benefit to the livestock industry and the health of wildlife," Galey says.

Donal O'Toole, head of the Department of Vet-

University of California-Davis student Kelly Buckle was awarded a stipend last winter to participate in the wildlife-livestock disease externship program coordinated by the University of Wyoming's Department of Veterinary Sciences. Among her experiences was chronic wasting disease field work near Glenrock, where she collected tonsil biopsies from white-tailed deer.

erinary Sciences and director of the WSVL, says the program has helped move many of the participating students into a wildlife field.

"Since Beth's untimely death, we continue to get requests from people who wish to come to the department to work on wildlife diseases, and the endowment will ease the burden on them," O'Toole says.

Students from other institutions interested in applying for externships, which generally last from three weeks to two months, can read more about the program on the Department of Veterinary Sciences Web page at http:// uwadmnweb.uwyo.edu/ VETSCI/. Click on Externships under Student Info.

"We prefer students interested in wildlife disease training to visit during the winter, when we have an incredibly diverse array of activities going on, including opportunities to become involved in fieldwork," Cornish says.

Removal process lowers arsenic in private

by Steven L. Miller, Senior Editor Office of Communications and Technology

Private well sampling in Wyoming and five surrounding states helped College of Agriculture researchers develop functional and commercially attractive arsenic removal technology for the rest of the world.

The team found 32 samples from more than 52 private wells in Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming exceeded the U.S. Environmental Protection Agency (EPA) recommendation of 10 parts per billion of arsenic for human drinking water. Some samples were more than 50 parts per billion, and one sample was more than 100 parts per billion. Letters were sent to well owners detailing the results along with an arsenic information packet.

This regional assessment project was selected for presentation at the 2006 Agricultural Science and Education Exhibition



Department of Renewable Resources Assistant Professor Ginger Paige, second from left, presented the poster Regional Assessment of Arsenic in Domestic Wells of Small Communities in Region 8 States at the 2006 Agricultural Science and Education Exhibition and Reception February 28 on Capitol Hill in Washington, D.C. From left are Wyoming Sen. Craig Thomas, Paige, Susan Thomas, wife of Sen. Thomas, and Frank Galey, dean, College of Agriculture. The poster was selected for the event by the Board of Agriculture Assembly of the National Association of State Universities and Land-Grant Colleges.

and Reception February 28 on Capitol Hill in Washington, D.C.

Dissolved arsenic in water is toxic to humans, plants, and animals. Arsenic in excess of 50 parts per billion causes increased risk of skin, lung, bladder, and kidney cancer, according to Professor K.J. Reddy in the Department of Renewable Resources. Technology developed through research by Reddy dropped most of the well sample arsenic levels to almost non-detectable levels.

Research into the arsenic-removing ability began in 2003 when Reddy had a fortunate failure. The substance he was using in an attempt to remove selenium from water was not quite successful – but was removing arsenic wonderfully. UW graduate student Viswatej Attili of Hyderebad, India, was assisting Reddy as part of his master's program. The two experimented with water spiked with arsenic and also with water samples collected from natural sites in Wyoming and Montana and from coal-bed methane production areas.

wells to near non-detectable levels

Reddy developed a successful and economical arsenic removal system, a development that did not go unnoticed by countries whose populations were plagued by the tragedies of drinking water with high levels of arsenic.

A subsequent licensing agreement resulted in 2004 between the university and a North Carolina-based company, which is marketing the ARTI-64TM product worldwide.

"Global awareness of arsenic contamination in drinking water skyrocketed during the 1990s when more than 35 million people in Bangladesh and India were inadvertently poisoned by drinking arsenic-rich water," says Reddy, a native of India.

In Southeast Asia, many have died due to arsenic poisoning and many more are expected to perish or suffer serious illnesses. "This is one of the worst ongoing catastrophes experienced by modern human society," he says.

The World Health Organization and the EPA recommend 10 parts per billion of arsenic as the limit for human drinking water. That guideline must be met by public water distribution systems, but private wells are not under that umbrella.

Reddy's reputation for research prompted Travis Roth, a new graduate student in 2004, to seek out Reddy for a possible graduate assistantship. "It was because of his projects and his enthusiasm that brought me to him," says Roth, who aspires to international research.

"Once we spoke, I expressed my future goals, and he suggested that his arsenic project would fit nicely into my plans," recalls Roth.

His efforts succeeded. Roth has presented his arsenic sampling research results to several regional and national meetings and workshops.

The project started as an economical study of the impacts of water-related problems in Bangladesh and India. That morphed into a regional study so Roth could develop the analytical and laboratory skills he would need in his career.

UW teamed with the Cooperative State Research, Education, and Extension Service in Colorado, Utah, North Dakota, South Dakota, and Montana. The partnership provided an opportunity to integrate arsenic research and removal technology within the area designated by the EPA as Region 8.

"We settled on a regional study to gain access to private wells that were potentially high in arsenic concentrations," says Roth.

The study had two goals. First was to obtain



The ARTI-64[™] process dropped arsenic levels (black) to near non-detectable levels (gray).



Only a few of the wells tested were below the 10 parts per billion limit mandated by the U.S. Environmental Protection Agency.



Graduate student Travis Roth found that 32 samples from more than 52 private wells exceeded the U.S. Environmental Protection Agency recommendation of 10 parts per billion.



The ARTI-64 $^{\scriptscriptstyle\rm TM}$ process treats about four liters of water per hour.

samples from a wide variety of geohydrological makeup to test Reddy's ARTI-64TM material. "Second, we wanted to gain experience in the network concepts KJ has seen success with in the past," notes Roth.

The network involves well owners and partners and provides an educational tool to confront many of the problems in an environmental project, notes Roth.

"It also allows for a unique experience to understand the implementation process outside of the academia setting by going into the field and talking with people face-to-face and taking their suggestions and relaying my own back to them," says Roth.

"Overall, the actual sampling and talking with the well owners were the most eye-opening part of the study because they are the ones who have to deal with arsenic in their water every day. They are the face of the study."

Roth says the well owners were gracious and accepting of having researchers in their homes.

"We usually spoke about the project awhile, and I answered to the best of my abilities all their questions as honestly as I could," he notes. "Sometimes, the honest answer wasn't what they really wanted to hear but to solve any real problems one must have complete and accurate information, so they appreciated my frankness."

Back in the lab, the ARTI-64TM system removed 86-99.5 percent of the arsenic in the water but only at a rate of about 63 milliliters per minute, or about four liters per hour. Efforts to increase the rate will be made.

Roth said a viable technology for home use is about three to five years away.

Experimental economics laboratory goes online

by Robert Waggener, Editor Office of Communications and Technology

A new, state-of-the-art computer laboratory for economic experiments in research and teaching went online this semester in the Department of Agricultural and Applied Economics.

"The laboratory will be used for research purposes as well as allowing students to participate in economic experiments. Students will experience such things as how livestock auctions and other trading institutions work or how economic policies impact the markets," says Professor Dale Menkhaus, who helped develop the laboratory.

Colleagues in the department who assisted in the project, including the design of the lab and development of computer software, were assistant professors Chris Bastian and Mariah Tanner Ehmke, Associate Research Scientist Tom Foulke, and Farm and Ranch Management Specialist John Hewlett.

Other potential users of the lab include Associate



Among those involved in development of the new experimental economics laboratory in the Department of Agricultural and Applied Economics were, from left, Mariah Tanner Ehmke, John Hewlett, Chris Bastian, and Dale Menkhaus. They review plans early in the project.

Professor Don McLeod in the Department of Agricultural and Applied Economics and professors of economics and finance Owen Phillips and Jason Shogren.

Interim department head and Associate Professor Roger Coupal says, "From a research perspective, you can focus on particular aspects of a policy. Does it cut back on production? Does it give producers more income? How does it affect supply and demand?"

Tanner Ehmke adds, "Research will be the laboratory's primary use. Undergraduate and graduate agribusiness and resource economics classes will also use the laboratory."

The classes include agricultural market analysis, agricultural commodities and futures markets, advanced agricultural markets/prices, and agribusiness marketing in the Department of Agricultural and Applied Economics; and experimental economics and industrial organization in the College of Business's Department of Economics and Finance.

Room 228 in the College of Agriculture, previously used as a graduate student office, was refurbished and outfitted with 17 computers (16 workstations and a master for controlling the experiments) and a state-of-the-art projection system. Physical Plant also built new tables and custom dividers based on the design provided by the department.

"Before, we were using other computer labs on campus to run our experiments. At times, it was difficult to even get into the labs because of scheduling. Also, those labs are designed for general computer classes, not economic experiments," Menkhaus says.

Tanner Ehmke adds, "The new lab can be set up to accommodate different levels of individual and group decision making ranging from very private to public. That is difficult to achieve in a regular computer lab."

The facility is reportedly the first "full fledged" experimental economics lab in Wyoming, according to a departmental newsletter. It cost approximately \$95,000 with funds coming from the university's budget for new equipment.



SAREC Director Jim Freeburn, center, describes features of the new livestock building. Just left of Freeburn is College of Agriculture Dean Frank Galey. The building includes a small laboratory and a processing area for taking research data from cattle and sheep.

SAREC field days

by Steven L. Miller, Senior Editor Office of Communications and Technology

The public viewed new facilities at the Sustainable Agriculture Research and Extension Center (SAREC) near Lingle during field days in June and August and during the scheduled dedication ceremonies in September. The dedication ceremonies end a process that started in 1999. A review team of farmers, ranchers, agribusiness representatives, a county commissioner, a former legislator, and UW faculty members recommended in 2000 the university build the SAREC facility to replace the existing Archer and Torrington centers to complement research and extension (R&E) centers in Powell and Sheridan.

The trustees in 2003 approved the purchase of the former ranch and also approved the sale of the UW Archer and Torrington R&E centers, with proceeds used to purchase property for SAREC.

Former Agricultural Experiment Station director Jim Jacobs was involved with the process from the beginning until August of last year when he stepped down to return to the Department of Agricultural and Applied Economics. Stephen D. Miller, thenhead of the Department of Plant Sciences, became the director.

"It's a set of land and facilities that provides UW faculty members a field lab in one location to do crossdisciplinary research," says Jacobs. The other R&E stations are either solely irrigated or dry land.

"None had the size that would provide the set of facilities or acreage to do the cross-disciplinary research," he says. "I think SAREC is a set of resources the college hasn't had before. As I tell everybody, how well it does and how well it is used is still up in the air."

A 5,700-plus squarefoot building is the cornerstone of the facilities and includes 10 offices, a research preparation room, and a seed laboratory.

The office has two meeting rooms – one with a capacity of 65 for community education and another for small groups of up to 15.

Also built were a livestock research building, a shop, a hazardous materials facility, and a feedlot.

The livestock facility has an office and a small laboratory along with a processing area for taking research data from cattle and sheep. The shop will be used to support research efforts at SAREC and will enable UW employees to complete work on plot equipment and more.

The hazardous materials facility houses pesticides and fuels.

Construction on the feedlot began earlier this year and features 28 pens.

Being built this fall is a wet lab and dormitory facilities with U.S. Department of Housing and Urban Development funds.

On the Web: http:// www.uwyo.edu/uwexpstn/ SAREC/SAREC.htm



Department of Plant Sciences Professor Jim Krall, right, provides information about a camelina plot while Research Scientist Jack Cecil holds the flip sheets. Camelina seed is processed for oil in the biofuels industry.

showcase new facilities



Medic, an annual legume, is being studied for possible forage use.



Members of the College of Agriculture advisory board pose before getting their first glimpse of SAREC improvements.

AG APPRECIATION

The College of Agriculture's outstanding alumni, legacy winner, and research partner for 2006 will be honored September 22-23 as part of Ag Appreciation Weekend, a celebration of the importance of agriculture to Wyoming's history, culture, and economy.

Jerry Rankin, chief operating officer and vice chairman of the board of The Jackson State Bank and Trust, and Blair Wolfley, manager of the Washington State University's Vancouver Research and Extension Unit and WSU Extension's southwest district, will be honored as the outstanding alumni.

The Legacy Award winner is the Mead family. Pete, Matt, Brad, Muffy Mead-Ferro, and their families have continued their grandparents' (Cliff and Martha Hansen's) and Mary Mead's legacies. She was the mother of Matt, Brad, and Muffy Mead and former wife of Pete Mead.

The outstanding research partner of the year is Bayer Crop-Science for its support of research at the College of Agriculture.

The schedule includes: September 22

• Dean's Ag Appreciation Dinner honoring Rankin, Wolfley, Peter Mead, Brad and Kate Mead, Matt and Carol Mead, and Muffy Mead-Ferro and Michael Ferro, and Bayer Crop-Science at Crane-Hill Dining Room. Reception at 5:30 p.m. and dinner at 6:30 p.m. The ceremony will follow. Those wishing to attend may make reservations by September 11 by contacting the College of Agriculture Development and College Relations office at (307) 766-3372.

September 23

• 24th annual Ag Appreciation Day Barbecue, Tailgate Park, noon to 2 p.m. One dollar from each ticket is earmarked for an Ag Day Barbecue Scholarship awarded annually to a deserving student. Remaining proceeds help fund various agriculture college student organizations. Tickets are \$8 each, and children under 5 are free. They can be purchased at the event or in advance through the Cowboy Joe Club at (307) 766-6242 or the college at (307) 766-4034.

• Wyoming vs. Air Force. Kickoff 2:30 p.m. Purchase Ag Day block discounted football tickets on-line by accessing the on-line ticket purchasing system at wyomingathletics.com. Choose the link Tickets on the left side, choose the link Click Here To Purchase Wyoming Tickets. Choose the group ticket option on the left. The group ID is AGDAY, and the password is POKES. Follow the appropriate steps to complete the ticket order.

Bayer CropScience is

by Steven L. Miller, Senior Editor Office of Communications and Technology

Monies provided by the 2006 Research Partner of the Year has funded several graduate student programs and numerous undergraduate research assistants at the College of Agriculture in addition to crop research.

Bayer CropScience and its subsidiaries the past 25 years have provided more than \$25,000 annually to plant science programs at the University of Wyoming, says Stephen D. Miller, associate dean and director of the Agricultural Experiment Station. "They have been and continue to be a very stable source of funding for programs," Miller says.

Bayer CropScience is based in Germany with U.S. corporate headquarters in North Carolina and has regional technology stations at several sites. Bayer CropScience sells crop protection products including fungicides, herbicides, insecticides, and seed treatments.

Americans know several Bayer company products that are part of the culture – Bayer Aspirin was introduced in 1899, and the company began advertising Alka Seltzer in the U.S. in 1931.

In October 2001, Bayer signed an agreement to purchase Aventis CropScience. The largest acquisition in Bayer's history expanded its crop protection business. With about 22,000 employees, the company is the number one supplier on the world market for crop-protection products, according to the company.

"It's an honor to be recognized," says Charlie Hicks, who lives in Colorado and is a field development representative for the company.

"It's extremely valuable for us to work with the University of Wyoming. Many UW researchers have good relationships with people in the weed and pest districts, dealers, and consultants in Wyoming," he notes. "Those customers

WEEKEND

Research Partner of the Year

rely on UW recommendations on new products. It's critical that UW evaluate our products and explain to customers how those products might fit in their production systems." in developing an applied research program and checks with UW progress.

"I view their research trials, and they often come to view mine," he says. Bayer CropScience spring-seeded small grains, notes Miller.

Research has also led to winter annual grass control in winter wheat, single-pass weed control systems for reduced-till only is it of benefit for UW, but it also benefits Bayer CropScience in being able to work with a land-grant university like UW to help evaluate and position our products in the state."

outstanding research partner

Hicks says many states will not recommend a company's product unless it has been evaluated in the state for several years.

Bayer CropScience has had products evaluated at the UW research and extension centers at Powell and Sheridan and the Sustainable Agriculture Research and Extension Center near Lingle.

As a field development representative, Hicks conducts research trials with growers in Wyoming, Colorado, and western Nebraska. As a product approaches commercial registration, he approaches UW researchers who may be interested in testing the product. He works directly with university researchers is committed to providing new technologies for the agriculture industry. "There aren't many companies today as actively involved in launching new products," he notes.

"Several companies have gone strictly biotech, and some have scaled back screening of crop-protection products," he says. "Bayer CropScience is still actively involved in screening and bringing new cropprotection materials to market."

Much of the research Bayer CropScience supported has led to the development of new formulations of products for weed control in sugar beets and wild oat and broadleaf weed control systems in corn, environmental and edaphic (effect of soil characteristics on plants and animals) factors influencing herbicide carryover from one crop season to the next and, most recently, downy brome control trials in pasture and rangeland settings.

"Being recognized as one of your major contributors is a two-way street," Hicks says. "Not

On the Web:

http://www.bayercropscienceus.com/ http://www.uwyo.edu/uw-

expstn/

http://www.uwyo.edu/ UWAG/

http://www.bayercropscience.com/bayer/cropscience/cscms.nsf/id/ Home_EN



AG APPRECIATION UW taught rancher/banker Jerry Rankin

by Robert Waggener, Editor Office of Communications and Technology

It's been more than 40 years since Jerry Rankin earned an animal science degree in the College of Agriculture and helped lead the University of Wyoming to its second-ever national championship in athletics.

But memories of participating on the rodeo team and taking agriculture classes are still vivid.

"I learned a lot about agriculture while attending UW but even more important were the things I learned about how to interact with instructors and fellow students and athletes. They taught me about human relations, fair dealings, and how to respect others," Rankin says.

That is still with Rankin as he interacts with family and friends, business colleagues, and political leaders across the state and region.

He has worked in agriculture and banking since graduating from UW in 1962, a year after the Cowboys won a national championship in rodeo – UW's second national title behind the men's basketball crown in 1943.

Rankin is vice chairman of the board of directors and chief operating officer of The Jackson State Bank and Trust, is heavily involved in the Jackson community, and remains a strong supporter of the UW rodeo team and 4-H, the youth arm of the Cooperative Extension Service (CES).

These are among the reasons Rankin was selected a 2006 Outstanding Alumnus for the College of Agriculture.

Jackson resident and former U.S. Sen. Clifford



to the state of Wyoming, and helped to increase public awareness of the importance of agriculture through his volunteer work with various agriculturalrelated organizations," Hansen states.

Writing letters of support were David Johnson, director of the Cheyenneendeavors in agriculture and finance," Johnson wrote. "He started a finance career 30 years past using his agricultural background and has advanced to a leadership role in one of Wyoming's largest independent community banks, a bank that has and is one of the very top performing financial institutions in the U.S."

Rankin represented the banking industry in efforts to modernize state laws to the benefit of banking, small business, and the agricultural community, Larson states.

He adds, "As a graduate of the College of Agriculture, Mr. Rankin has remained closely tied to the

outstanding alumnus

Hansen nominated Rankin for the honor.

"Mr. Rankin has distinguished himself in his professional career in both the ranching and banking professions, made significant contributions to agriculture both locally and based Wyoming Bankers Association, and Grant Larson of Jackson, president of the Wyoming Senate and director of The Jackson State Bank and Trust.

"Jerry has taken full advantage of the education received at UW to pursue college as an alumni member, supporter in numerous ways with special interests in the college and its special contributions to the heritage and economy of our great state."

Rankin's roots to UW and the college date back to

WEEKEND how to work with people

the 1930s when his father, the late J.S. Rankin, took classes for two years before being drafted in World War II.

"I was 5 when Dad came home from the war. I faintly remember standing at the bus station with my mother and sister, waiting for him to arrive," Rankin recalls.

His father wanted to continue his education at UW, Rankin says, "But that was not an economic option at the time. He had a family to support and a new ranch to run."

J.S. moved his family from LaGrange to a ranch northeast of Douglas.

"He had a very high regard on a personal and professional level for 4-H leaders, CES agents, faculty members, and deans for the College of Agriculture," Rankin reflects. "He wanted me to go to college, and my childhood background naturally sent me to UW."

Rankin remembers selling several 4-H animals to help fund his first semester at UW in the fall of 1958. "I remember tuition that semester was \$116," he says.

Rankin, who was active in 4-H and FFA while growing up in Douglas, was a bareback rider, steer wrestler, and bull rider on the rodeo team. He also served as the team's president and was a member of UW's Livestock Judging Team.

Rankin says he believes one can learn about agriculture in the classroom and the field, but one cannot learn how to successfully work with people without interacting with them. He believes attending college is one of the best ways to achieve that because of the cultural diversity.

"Successfully interacting with people is what I really learned how to do in college," Rankin says.

Shortly after graduating, he became an agricultural lending supervisor for the U.S. Department of Agriculture's Farmers Home Administration in Sheridan, and then he went to work for the Sheridan County-based Padlock Ranch, one of the largest in the country. He served as administrative assistant and assistant ranch manager for about seven years before being hired as ranch manger for the Snake River Ranch in Jackson. He combined that endeavor with a cattle operation in California before entering banking.

His family still owns the family ranch near Douglas. At his home in Jackson, Rankin raises registered longhorn cattle and lends them to local 4-Hers for activities and the Jackson High School rodeo team for ropings. He has been involved in Friends of the Fair in Jackson, which built an indoor arena for youth activities, including 4-H. Fund-raising efforts continue to pay for the facility.

"I have 40 years in ranching, farming, banking, and community service. I hope I have learned every year and have helped people every year. I know I still have lots to learn about a lot of things," Rankin notes. He proudly says the tradition his father started by attending UW has continued.

Rankin's wife, Pamela, and the couple's three children and one of two stepdaughters also earned degrees at UW.

Son Kelly is a deputy United States attorney in Casper, daughter Emily is an attorney in Jackson, and son Michael is an attorney and FBI administrator in Carlsbad, California.

Stepdaughter Kedrin Case earned a degree from UW, too, and she and her family live in Dublin, Ireland. Their other stepdaughter, Rhaetia Hanscum, graduated from the University of Oregon and teaches third grade in Denver, Colorado.

"Wyoming is such a great state to live, play, and impart the basics into the young lives of our children," Rankin says.

G APPRECIATION Blair Wolfley: 'Education — anytime,

by Robert Waggener, Editor Office of Communications and Technology

Blair Wolfley's motto is "Education – anytime, anywhere, anyway."

That's evident when visiting with University of Wyoming alumni and hearing from colleagues about the College of Agriculture Outstanding Alumnus for 2006.

Wolfley rose in the ranks at Washington State University (WSU), where he started as a research associate in 1976 and now manages WSU Extension's southwest district, which covers 11 counties.

The Star Valley, Wyoming, native credits much of his success to his education at UW, where he graduated in 1973 with a bachelor's degree in agricultural business and in 1975 with a master's in agricultural economics. He was on a full-ride wrestling scholarship, and working as a custodian in the athletics department and later as a research assistant covered other college expenses.

"The experience I got with the wrestling, the work, my education, and the interaction with students, professors, and staff was as good as I could have found anywhere. UW is a great place for people to get started," says the Vancouver, Washington, resident.

Wolfley says he developed a strong work ethic growing up on the family ranch in Star Valley, and that continued at UW as he learned how to balance academic studies with wrestling and job duties.

"Going to school was much easier once I was through with wrestling, but there was also an emptiness. We had a great group of guys on that team."



and Washington, as well as all the schools in the original Western Athletic Conference. We didn't win at a lot of those places, but we had a great time," he reflects.

He also talked about how a number of faculty members in the College of Agriculture provided guidance that stuck with him

"The most important

aspect of my job is to make resources available so the faculty members, extension coordinators, and support staff can do great programming," Wolfley says. "My job puts me in a position to promote faculty and staff members who do great work."

Arlen Davison of Puyallup, Washington, professor emeritus for WSU's College of Agricultural, Human and Natural Resource Sciences, nominated Wolfley for the award. Davison earned bachelor's and master's degrees from the UW College of Agriculture in the mid-1950s.

"From leadership development efforts with 4-H to teaching human devel-

and

Wolfley walked down memory lane as he recalled Wyoming's wrestling program back then.

"We had a coach who had a lot of connections, and we were wrestling at Iowa, Nebraska, the Oklahoma schools, in Oregon

throughout his career.

Wolfley now shares that knowledge with approximately 100 people he oversees in his extension district. He's also the manager of WSU's Vancouver Research and Extension Unit.

opment classes for credit at WSU Vancouver, Blair has helped people grow in their abilities to see themselves as capable of solving problems and giving service and leadership where and when opportunity calls," Davison writes.

WEEKEND anywhere, anyway'

Davison describes how Wolfley helped farmers develop budgets for smallscale production when he worked on a county level with WSU Extension, how he educated others about the importance of agricultural land preservation and maintaining open spaces, and how he taught hundreds of classes to help 4-H leaders and members improve leadership and life skills, solve problems, and build self-esteem.

"He is truly an outstanding member of the WSU faculty," Davison writes.

Through WSU Extension, Wolfley provides the statewide leadership for the federal Extension Indian Reservation Program (EIRP).

"He fosters diversity and the spirit of inclusion," states Linda Kirk Fox, dean and director of WSU Extension in Pullman.

Joseph Hiller, assistant dean for the University of Arizona's College of Agriculture and Life Sciences in Tucson, states he gained a deep respect for Wolfley while working with him on a regional level the past 10 years.

"The cornerstone of my comments on Blair's excellent record are grounded in his work in support of EIRP. He became deeply engaged and vested in EIRP over the years - convinced, as many of us are, that the program is not only 'good' but also truly vital for genuinely underserved audiences," states Hiller, who graduated from the UW College of Agriculture in 1984 with a master's degree in range management.

Hiller believes EIRP is not a popular program within the federal Cooperative State Research, Education, and Extension Service and many state land-grant institutions.

"Its very existence requires one to accept that conventional county-based extension programs are not meeting needs of American Indians living on Indian reservations. That's hard to accept for most high-level administrators," Hiller states.

He emphasizes "leadership and courage" is needed to help meet the needs of EIRP clients while at the same time requiring "considerable finesse" to not aggravate the extension system.

"Blair understands the juxtaposition very well and has succeeded in both arenas. He is clearly a man who has compassion for others along with a passion for lifelong learning," Hiller states.

Steve Harbell, director of WSU Pacific County Extension in South Bend, writes, "Blair has provided significant support for agricultural programs to improve production in a variety of crop and animal systems and to increase public awareness of the value of agriculture in the region. His extensive work with youth has given them new skills and knowledge that has enriched their lives."

Wolfley received a 30year certificate from WSU earlier this year. He was a research associate for WSU's Water Research Center in Pullman from 1976 to 1978 before accepting a position as extension project associate in 1978 in Puyallup. He has received five promotions since. "I am thankful I was able to spend a career working in a service profession and to continually learn and help people solve problems. I had a lot of satisfaction watching 4-H kids grow and learn to be responsible citizens," Wolfley says.

In his spare time, he enjoys woodworking and regrets there is insufficient time for an "adequate dose of fly-fishing."

Wolfley's wife, Kathy, a Laramie native, is a literary specialist for Fort Vancouver High School in Vancouver.

The couple have five children, who all have completed bachelor degrees.

James is a software manager for a fiber optics company in Utah; Jill is a homemaker in Vancouver; Daniel is a customer service trainer for US Bank in Gresham, Oregon; Megan is a human resources specialist for US Bank near Portland, Oregon; and Kelly recently earned a horticulture degree from Brigham Young University-Idaho.

The couple have 12 grandchildren.

AG APPRECIATION Legacy Award honors four generations of

by Steven L. Miller, Senior Editor Office of Communications and Technology

A s perhaps it should be, the Legacy Award this year is about generations. It's about former Governor and U.S. Senator Cliff Hansen and his wife, Martha, and their late daughter Mary Mead and her former husband Peter Mead and their children, Brad Mead, Matt Mead, and Muffy Mead-Ferro.

It's also about anyone who steps into the Cliff and Martha Hansen Livestock Teaching Arena and the Mary Mead Education Wing.

The family legacy will carry on with future recipients of the new Mary Mead Scholarship for Women in Agriculture to be awarded to women majoring in any of the agriculture degrees in the college.

Muffy is happy about the scholarship, but she says she realizes it's just one part of the vast array of things offered by the College of Agriculture.

"There are many, many ways to have exciting and productive careers in agriculture that will enable people to make a large contribution to the world," she says. "Just to be part of the college and UW and part of that effort to help people achieve their goals in agriculture is really gratifying."

Says Matt, "Agriculture and the University of Wyoming have meant so much in my life it is very humbling to be given an award from an institution I already feel a great debt of gratitude."

Matt, U.S. attorney for Wyoming who works in Cheyenne, drives by the teaching arena whenever he goes to his ranch in Albany



Brand – Brad Mead

County. "I have to admit my heart swells with pride knowing a facility that provides so much to so many has the names of my grandparents and Mom on the building," he says.

Muffy, who lives in Salt Lake City, Utah, is the author of two books and a Wyoming landowner, and Brad manages the family ranch near Jackson and has his own law firm in Jackson.

Cliff Hansen crystallized the value of education to Brad early. Brad recalls a day more than 30 years ago when his grandfather talked about his father and life in general while the two hauled cattle.

"He said you can have lots of acres or a nice horse or a pickup, but there is nothing you have that can't be taken away, except an education," Brad remembers. "That was what his dad told him, and that sticks firmly in my mind. Education is the one thing you can obtain for yourself and can never lose. I think that's one reason we are pretty excited about the scholarship. My brother, sister, and I believe the scholarship is appropriate. My mom, too, was a school teacher for awhile. Education is one of the things my family thought was pretty important, and UW, too."

Mary Gullikson of Loveland, Colorado, was a sorority sister with Mary. She traveled to Jackson to meet the family in 1956. The two were in each other's weddings and were lifelong friends.

"Those kids have turned out so well," Gullikson says. "Each one of them is smart and responsible. That whole family is so down-to-earth, and they get that from their grandparents, too. They are everso-friendly and natural."

Peter says he is honored the Mead family is receiving the Legacy Award, "especially in view of how many fine ranching families there are in Wyoming. We feel especially privileged to be selected from that group," he notes.

Peter grew up in Vermont and was skiing in Wyoming when he began

WEEKEND

Mead family

taking pack trips into the Tetons and Gros Ventre River Valley for a dude ranch. Muffy says her mother joked what first attracted her to him was the saddle in the back of his car and the skis on top.

"Within one year of them getting married, Granddad decided to enter politics and the ranch management fell to my mom and dad," Muffy says. "It was amazing the way my father rose to the occasion. The ranch flourished under him. He plunged full speed ahead into a life I don't think he had planned on. It was an adventure."

Mary and Peter would later divorce, but Peter still helps Brad and others in ranch matters. Peter attributes his ranching success to "not anything more than a love of ranching, hard work, and the support of family."

All three siblings have ranches or land that will become a ranch. Muffy is turning land she purchased in Wyoming from crop land to cattle pasture. "It's been a slow process but a



Brand – Matt Mead

wonderful adventure for me and for my kids," she says. "They think Wyoming is the greatest place in the world."

She remembers that living on the land gives freedom and independence, but there is a flipside, too. "Responsibility. There is a sense of stewardship for the land and the animals on it. In a sense, maybe I'm trying to recreate my own childhood, but my childhood was great," she says.

Matt never left Wyoming, noting all his best opportunities were right here.

The same holds true today. "I have great love for our state," he says. "The land certainly is wonderful, but it is the Wyoming people and the Wyoming spirit that make our state the best place to live."

He says a person sometimes returns to his or her roots. "This is particularly true when it is those roots that gave each of us the ultimate childhood, providing fun certainly, but, perhaps more importantly, lessons of life," he notes. "I want to provide the ranching experience to my kids and, frankly, I want it for myself and my wife. Many of my family's best days are when we can get away and spend time together working on the ranch."

Brad didn't stay in Wyoming after graduating from law school. He and his wife, Kate, moved to Phoenix, Arizona, where he practiced law for almost

eight years. They returned to raise their children in Wyoming. "We wanted them to be in Wyoming schools, which are some of the best in the world," he says. "We wanted them to be around their extended family and, as they got old enough, to appreciate their surroundings to be rural instead of urban."

He wouldn't prefer quitting one of his professions for the other, such as dropping the ranch and concentrating on his law firm. "Because we love ranching and want our two children to have the opportunity to continue to make a living in agriculture in Wyoming," he says. "Agriculture is one of the few areas of human endeavor that gives an individual a chance every day to be a problem solver, an innovator, a technician, an inventor, a business man, a doctor - and do all that outside in the company of their family."

award

They say a spirit of independence and self-determination was instilled in them by their parents and grandparents – characteristics they want to pass along to their children.

(Continued on page 28)

PROGRAM NOTES

Agricultural and **Applied Economics**

The Wyoming State Trails Program will use information from a Department of Agricultural and Applied Economics study to improve the state trails program for off-road vehicles (ORVs), including four-wheelers and dirt bikes.

"One of the interesting facets of the study relates to the multiple uses of ORVs. People use them not just to ride for riding's sake but also to access areas they may not normally be able to access for things like fishing, hunting, and camping," says Tom Foulke, an associate research scientist in the department.

Assisting in the study were Professor David "Tex" Taylor, interim department head and Associate Professor Roger Coupal, and Research Scientist Desiree Olson.

The department received \$46,200 from the State Trails Program to survey 1,900 ORV users. The funds came from state ORV stickers purchased by the users.

The department also contracted with the Wyoming Survey and Analysis



Center to determine how many residents own ORVs and how much of an economic impact they have on the state.

"Our study estimated approximately 37 percent of households owned ORVs in the past year," Foulke says. "That works out to almost 180,000 ORV riders in the state."

The survey revealed that individual users spent, on average, \$1,599 last year on purchases, repairs, and accessories. Residents spent an additional \$27 per day in trip expenses, while nonresidents averaged \$35 per day.

Tracy Williams, State Trails Program planner in Cheyenne, says the results will help determine where new trails should be built and where existing trails should be enhanced, how maps can be changed to

help users, and how safety programs can be improved.

There are approximately 1,500 miles of trails in the system. Williams says about 98 percent are on U.S. Forest Service and Bureau of Land Management lands.

Animal Science

Doctorate students in the Department of Animal Science again excelled in the graduate competition papers at the Western Section, American Society of Animal Science meeting. This year's event was June 21-23 in Logan, Utah.

Chuck Murrieta of Los Angeles, California, placed second and won \$300. He is working with Professor Dan Rule and Associate Professor Bret Hess in ruminant nutrition.

Becky Atkinson of Lingle placed third and won \$200. She was working in ruminant nutrition under Associate Professor Paul Ludden. She has recently completed her degree requirements and has accepted a position as an assistant professor at Southern Illinois University.

The Department of Animal Science team won

the Institutional Award. which included a \$2,000 stipend presented by Zinpro Corporation of Eden Prairie, Minnesota.

"Out of the four years the institutional award has been presented, our animal science students have won three times," says department head and Professor Doug Hixon.

There were 13 students from western regional institutions participating.

They are evaluated on oral presentations and written manuscripts. The department

sponsored the 10th annual Cowboy Youth Classic at the Cliff and Martha Hansen Livestock Teaching Arena in June. It attracted 61 participants from Wyoming and Colorado.

"The classic is an educational event for youths



Chuck Murrieta

with livestock projects," says Lance Miller, UW Livestock Judging Team coach and an organizer for the event. "The young people increase their knowledge in the care and management of their animals, livestock, and meats judging, and fitting and showing techniques."

The 11th annual classic is June 22-23, 2007.

Family and **Consumer Sciences**

Kyle Kostelecky has joined the child and family studies program unit in the Department of Family and Consumer Sciences. He was a faculty member at Northern Iowa University.

Professor Donna Brown and Associate Professor Sonya Meyer with graduate student Amy Copeland completed preparations for the invited August PCM Fashion Show in Reno, Nevada. Garments and models were competitively selected and an announcer was chosen.

"This is a wonderful opportunity to showcase the creative endeavor of our faculty and students," says Karen Williams, professor and head of the department.



The department had its annual retreat in August at Windy Hills guesthouse between Laramie and Cheyenne. Results of the recent alumni survey were shared and used as a framework for further curriculum and electronic portfolio decisions. New faculty and staff members were welcomed, and recent research and grant activities were shared.

The 6th Biennial University of Wyoming Early Childhood Leadership Institute was in July on the UW campus. The institute, Exploring Relationships as Partnerships in Early Childhood Education, was sponsored by the colleges of agriculture and education through support from the John P. Ellbogen Foundation. Williams was conference chair.

Professor Randy Weigel, a Cooperative Extension Service human development specialist, launched the Wyoming AgrAbility Project. The AgrAbility

Project was created to assist people with disabilities employed in agriculture. The project links the CES at a land-grant university with a private, nonprofit disability service organization to provide practical education and assistance that promotes independence in agricultural production and rural living.

Eleanor Frye of Fort Collins, Colorado, and Lindsay Suchor of Gillette were co-recipients of the Verna J. Hitchcock Award for Outstanding Overall Family and Consumer Sciences Student Award at the department's annual student recognition event in April.

Molecular Biology

Assistant Professor David Liberles and colleagues in the Department of Molecular Biology are examining differences in genomes between closely related species to understand both the specific differences and the general evolutionary processes driving these differences.

Gene duplication is an important process in differentiating vertebrate genomes, an organism's genetic material.

"Increasing from one to two copies of a gene enables one of the two copies to generate a new function or enables the subdivision of the ancestral function between the two copies, allowing further specialization of the gene," Liberles says.

Even in the absence of gene duplication, he notes, it is possible for genes to evolve new functions, although at a reduced rate.

One model system the Liberles group is examining is the evolution of modified functions of myostatin, a negative regulator of skeletal muscle development in two different groups of organisms.

"There is evidence myostatin has changed function between sheep and cattle, and this change is being characterized at the molecular level," Liberles



David Liberles

PROGRAM NOTES

says. "Further, the ancestor of salmon, trout, and char had four copies of myostatin while mammals like sheep and cattle have one."

The effect of gene duplication on myostatin function in salmonids is also being researched by the group.

"These model systems, together with theoretical work, will enable a better understanding of how genome change between closely related species is linked to phenotypic change in organisms," he says.

Liberles moved here last December from the Computational Biology Unit at the University of Bergen, Norway, where he was a group leader.

His team in the Department of Molecular Biology includes post-doctoral researchers Alexander Chourbanov, Katharina Dittmar, and Steven Massey; doctorate students Himanshu Ardawatia, Shruti Rastogi, Tim Hughes, and Asa Tellgren; and undergraduate student Katie Harris.



Steve Herbert

Plant Sciences

Steve Herbert, associate professor of botany, became interim head of the Department of Plant Sciences August 1.

Herbert received his master's of science degree in 1984 and his doctorate in 1988 from the University of Washington. His research interest is in how photosynthetic organisms accommodate changing environmental conditions.

Professor **Fred Gray**, who served as interim department head the past year, retired August 31. Gray joined the department February 1, 1980, as associate professor of plant pathology and nematology. He was involved in instruction and applied research in the biology and management of crop diseases.

Gray received his bachelor's of science degree

in biological sciences at Troy State University in Troy, Alabama. After working as a research technician for Washington State University and the U.S. Department of Agriculture's Agricultural Research Service for three years, he was employed as a research extension assistant by the Department of Plant Pathology at the University of Arizona. He completed his master's and doctorate degrees in 1971 and 1975 there.

Upon graduation, Gray worked with a private seed company in California then with the Cooperative Extension Service at Auburn University before coming to Wyoming.

"Working with people in agriculture, especially students, has been a very rewarding experience," says Gray.

Renewable Resources

Overwhelmed by scary, alien-looking earwigs in a basement bathroom?

Are insatiable grasshoppers eating you out of houseand-home on the range?

Do mysterious bugs leave perfectly round notches on each leaf of a lilac bush? Assistant Professor **Alexandre Latchininsky** and Research Scientist **Scott Schell**, entomology specialists in the Department of Renewable Resources, help residents deal with these and thousands of other "bug" problems in a backyard, garden, or rangeland.

To provide Wyoming clientele with scientifically sound, economically feasible, and environmentally safe pest-management advice, it is necessary to first identify the culprit.

The duo operates the UW Arthropod Diagnostic Clinic, which processes increasing numbers of pest samples every year – from 60 in 2003 to 221 in 2005. Over the last two years, the extension entomologists provided 240 phone, email, compressed video, or walk-in pest management recommendations to clients



Alexandre Latchininsky



from all Wyoming counties.

The Master Gardener program has been growing fast over the past few years. The two have developed a horticultural entomology program for Master Gardeners and delivered it to more than 100 students in eight counties. Topics covered include "Garden Insects: Pets or Pests?," "How to Use Insect Identification Keys," "Wyoming Butterflies," "New Insecticides," and many others.

For a more specialized audience like weed and pest specialists and land managers, they developed a two-day applied entomology short course. This class was a hit in 2006 and was featured on the UW Web site. It became so popular organizers had to cap the class size at 25 students due to workspace limitations in the entomology teaching laboratory.

Recent publications of UW extension entomology include a field guide to *Common Wyoming Pest*

Grasshoppers, B-1161, and a poster titled "Pest Grasshoppers of the West: Identification and Management," B-1171. Both are available for free downloading at http://www.uwyo. edu/CES/plantsci.htm or by e-mailing the College of Agriculture's Resource Center at bixbyd@uwyo.edu, calling the center at (307) 766-2115, or writing to the University of Wyoming, College of Agriculture, Department 3313, 1000 E. University Ave., Laramie, WY 82071.

For more information and updates, visit the UW CES entomology Web site at: http://uwadmnweb. uwyo.edu/UWCES/Entomology.asp

Veterinary Sciences

The Wyoming State Veterinary Laboratory (WSVL) began testing freeranging migratory waterfowl this summer for possible infection of the highly pathogenic avian influenza H5N1. The WSVL is expected to test samples from approximately 1,700 birds through this fall.

"The testing is occurring as part of a national surveillance effort to track



the possible movement of the H5NI strain across North America should it be imported from Asia on the Pacific Flyway," says **Donal O'Toole**, director of the WSVL, which is managed by the Department of Veterinary Sciences.

Avian influenza is a general term used to describe a widely endemic viral infection present in wild populations of waterfowl and many other bird species at all times.

The emergence and spread of the H5N1 subtype in Asia over the past few years has elevated concerns about the virus reaching North America.

The testing is being conducted by veterinary sciences department Assistant Professor **Nicky Bratanich** and her staff in the virology and diagnostic serology sections of the WSVL.

"Dr. Bratanich's laboratory will provide the state's testing capability," O'Toole says. Terry Creekmore with the Wyoming Department of Health says many of the samples sent to the WSVL will come from birds trapped live in Wyoming. After cloacal samples are taken, the birds will be released unharmed.

"Other samples will come from hunter-killed waterfowl (mostly geese and ducks) this fall and birds found dead," Creekmore notes.

Information about HPAI and Wyoming's possible response is posted on the Wyoming Livestock Board's Web page at http:// wlsb.state.wy.us/animalhealth/AI.htm.

Academic and Student Programs

"Some like it hot, hot, hot! No, I am not talking about Wyoming's weather, but I am talking about the new College of Agriculture Speaker Series," says **Pepper Jo Six**, recruitment coordinator in the Office of Academic and Student Programs.

"The purpose of the series is to bring interesting topics into the high schools and get students to identify with College of Agriculture faculty and staff members," Six says.

PROGRAM NOTES

"Here in the College of Agriculture, we have amazing research projects and various on-going studies we will be bringing to Wyoming classrooms. This speaker series will be advertised to all Wyoming high school teachers for their classroom use," she adds.

Among the topics to be offered by faculty and staff members are agriculture careers, wearable art, skin cancer prevention, rabies, horticulture, organic food, beef cattle production, muscle dynamics, and roots and microbes.

Faculty and staff members who volunteered for the program early in its planning stages include **Donna Brown, Sonya Meyer**, and **Randy Weigel** in family and consumer sciences; **Todd Cornish** and **Ken Mills** in veterinary sciences; **Karen Panter** and



Pepper Jo Six

Dave Wilson in plant sciences; Doug Hixon and Warrie Means in animal science; Jerry Johnson in molecular biology; and Six.

"I believe more faculty members will want to contribute to this program after they see the success," Six says.

A brochure will be mailed to all Wyoming high schools this fall detailing the presentations. The title is "Add some spice to your lectures with the College of Agriculture Speaker Series."

The cover is in bright red and includes a photo of red peppers, and it was designed by **Tana Stith** in the Office of Communications and Technology.

Agricultural Experiment Station

Stephen D. Miller has been director of the Agricultural Experiment Station (AES) for nearly a year. One of the hardest parts of his job has been not doing weed science research around the state; however, he says the year has been very exciting and crammed with activity.

Bret Hess began working half-time in the AES office June 1. Hess is participating in the LEAD21



Program, which is designed to develop new agricultural leadership for the 21st century. Hess is an associate professor of ruminant nutrition in the Department of Animal Science. "Bret is a tremendous addition to the team and is spending considerable time and effort writing grants to support AES activities around the state," Miller says. "He is also involved in numerous activities that are strengthening his leadership skills.

One change is the creation of a main research and extension center at Laramie. This involves combining the existing animal science, veterinary sciences, and greenhouse facilities under the AES. Management and day-today operations will not dramatically change.

The summer had a number of field days and

open houses around the state. The Sustainable Agriculture Research and Extension Center near Lingle hosted the Western Society of Crop Science meeting and small grains and biofuels tour in June and a row crop and livestock facilities tour in August, and it hosted a grand opening dedication ceremony September 7.

The Sheridan Research and Extension Center hosted several workshops in May and a field day in late June. **Justin Moss**, center director, has greatly expanded the research capabilities of the center for examining coal-bed methane water and its effects on plants.

The Powell Research and Extension Center hosted a sugar beet tour in July. The Wyoming Agricultural Business Council met there in early August, and the center also had a field day in August. The University of Wyoming Seed Analysis Laboratory staff members at the center are expanding their facilities.

"Hopefully, you will have an opportunity to visit all these excellent research facilities," Miller says.

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Cooperative Extension Service

The University of Wyoming Cooperative Extension Service has had several new hires this year.

They include: Nutrition and Food Safety Educators

• Karla Case has a bachelor's degree in nutrition from the University of Arizona in Tucson and is a registered dietician working in the Natrona County office.

Agriculture Educators

• **Ryan Rapp** is based in Converse County and also covers Natrona and Niobrara counties with emphasis on crop systems. Rapp holds both bachelor's and master's degrees from UW.

• Lindsay Taylor is based in Campbell County and also covers Crook and Weston counties with an emphasis in livestock systems. Taylor has a master's degree in integrated resource management from Colorado State University and a bachelor's degree in animal science from California Polytechnic State University in San Luis Obispo, California.

• Lisa Perry is the agriculture and natural resources educator on the Wind



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River Indian Reservation. Perry has a bachelor's degree in rangeland and watershed management from UW.

CES's Community Development Education (CDE) initiative team is continuing expansion of its Extension Volunteer Organization for Leadership, Vitality, and Enterprise (EVOLVE) program in the western United States. Rhonda Shipp, Big Horn Basin Area community development educator, presented two sessions at the Cooperative Extension Western Regional Mid-Managers Conference in Monterey, California, in July on leadership development because of the success of the Wyoming program.

The CDE team members will conduct training for Idaho extension educators on the EVOLVE curriculum in October in Jackson. Leadership programs have been initiated in Park, Big Horn, Washakie, Uinta, Lincoln, Sublette, and Weston/Crook counties.

Ag Development and College Relations

When you hear the word "student," what image comes to mind? For many, it is a younger person – perhaps a recent high school graduate – working toward a bachelor's degree in his or her chosen field.

But this is not a complete picture, says **Anne Leonard**, director of the Office of Ag Development and College Relations.

Graduate-level education is also an important component of the teaching, research, and outreach mission of the College of Agriculture.

Many of the articles contained in this issue of *Ag News* highlight work done by some of the 148 graduate students in the College of Agriculture. An example is the graduate students working on water quality with Professor K.J. Reddy in the Department of Renewable Resources.

Increasing graduate student enrollments reflect a growing trend in today's society as many careers now require either a master's degree or a doctorate. In addition to meeting the demand for a well-educated work force, graduate education is an integral part of the college's research activities.

Many college departments rank as one of their highest priorities the need to attract and retain good graduate students (and being able to offer them financial support). The college only has five privately funded awards specifically for graduate students. Increasing the number and size of privately funded graduate student awards is a main focus for the college.

If interested in learning how to help or for more information about creating a graduate student award, please contact the College of Agriculture Development and College Relations Office at (307) 766-3372.



Anne Leonard

Legacy Award Winner (Continued from page 21)

"An independent thinker is not an easy thing to be," notes Muffy. "It's much easier to follow the herd and do what everybody else does. My mother was never that way. She wanted us to make up our own minds



Brand – Muffy Mead-Ferro

about things. She felt bottomless responsibility for the ranch and the cattle. She was never going to blame the weather, the cattle market, or employees for the way things turned out."

Matt says his mother provided the best example of what his family taught him. During her run for governor, she asked him to operate the ranch. She didn't give much instruction, but "she did tell me something that has come to mean a great deal to me as I continue to reflect on the way she led her life," he says.

She told him when gathering cattle a person has to ride the outside fence line, the longest loop. The ride is harder and longer than anyone else's, but it is the only way to make sure an animal is not left behind.

"It is what your grandfather did, what your father did, and it is what we expect from you," she told her son.

"Her comment is very symbolic to me," Matt says. "It is a reminder that in every area of our lives, in order to do our best, we must go where it may be difficult and even perhaps dangerous, but this is the only way to make certain we don't miss out or lose what we care about."

The instruction will stay with him forever, he says, "Because riding the 'longest loop' is what Mary did in every aspect and every day of her life, and it is what she was doing on the day she died."



Senior Editor Steven L. Miller

Editor Robert Waggener

Layout and Design Tana Stith

Send comments or suggestions to: Dean Frank D. Galey Dept. 3354, 1000 E. Univ. Ave. Laramie, WY 82071-3354 (307) 766-4133 agrdean@uwyo.edu

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