

AG NEWS

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Dear Friends and Colleagues,

The greatest privilege I have is to thank and honor those each autumn who have helped make the College of Agriculture what it has become. This year, during UW's Ag Appreciation Weekend October 7-8, we will be honoring two truly successful alums, a wonderful friend of the college, and a valued institutional collaborator.

Dick Taggart received both his bachelor's and master's degrees in agricultural and applied economics from the College of Agriculture. As chief financial officer of Weyerhaeuser Co., he is actively involved in the management of six million acres of timberland throughout the world as well as overseeing Weyerhaeuser's infrastructure. Weyerhaeuser is the largest producer of lumber in the world, and Mr. Taggart has spent 30-plus years with the company. Dick's interest in sustainability and the natural environment also impacts Wyoming through his commitment to the board of the UW Ruckelshaus Institute of Environment and Natural Resources.

Our Wyoming state treasurer, Cynthia Lummis, has never forgotten her roots in Wyoming agriculture. She graduated from the college with a degree in animal science then went on to graduate from the UW College of Law. She continues to be involved in ranching and has a deep interest in natural resource management. Cynthia also serves on the Ruckelshaus board.

The College of Agriculture's Legacy Award helps us to thank a person who has provided meaningful and lasting support for the college. This year's award will go to Glyda May, a lifelong rancher from Wheatland. Familiar with Wyoming winters, she understood the need for an indoor livestock teaching arena and helped make that facility a reality. A longtime advocate for the 4-H youth development programs, she helps young people attend national leadership conferences like Citizenship Washington Focus. She is now helping the college develop a chair of livestock and wildlife diseases.

Our outstanding research/outreach partner is the Wyoming Beef Cattle Improvement Association (WBCIA). In collaboration with Department of Animal Science faculty members and Cooperative Extension Service educators, WBCIA holds the annual WBCIA Bull Test, a feedlot test and carcass evaluation, and hosts educational programs that help producers better position themselves in the marketplace. WBCIA also sponsors a college scholarship program. Many College of Agriculture students have benefited from this scholarship support.

You will be able to read much more about our honorees inside. Other stories include an in-depth feature on plant sciences' professor Dr. Steve Miller, who is moving into the directorship of the Wyoming Agricultural Experiment Station. Articles are also present on a new experimental economics laboratory, the potential for growing crops for biodiesel production, highlights in the college, and departmental happenings.

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



Frank Galey

Dean Frank Galey
College of Agriculture

"No person was ever honored for what he received; honor has been the reward for what he gave."

Calvin Coolidge

F I R S T C U T



Study eyes snowmobiling

Economic losses to the Greater Yellowstone Area (GYA) if snowmobiling was banned could be greater than National Park Service (NPS) estimates, a dissertation by Department of Agricultural and Applied Economics Assistant Professor Chris Bastian suggests.

The NPS's socio-environmental impact statement suggests there would be minor effects on local and state economies, a larger adverse effect on communities in the GYA, and minor negative effects on total trips by snowmobilers to the GYA, which includes Wyoming, Idaho, and Montana.

"They predicted the economies to the three states wouldn't change. That snowmobilers would not be harmed much

and that there are lots of snowmobiling sites so they would still stay in the region. But they didn't have the data to back that up," Bastian says. "I wanted to do this for better economic information."

He decided that would be his dissertation. "I could do my dissertation on it and stretch myself by learning about random utility models," says Bastian. "The issue I focused on was whether snowmobilers substitute to other sites in the three-state region."

Bastian's dissertation is titled "Using Random Utility Models to Incorporate Substitution When Estimating Economic Values and Impacts of Closing a Unique Recreation Site: The Case of Snowmobiling in Yellowstone."

Bastian asked snowmobilers during the 2001-2002 season if they would participate in a survey and, if they agreed, to keep a diary of their trips to locations in Wyoming, Idaho, and Montana. At the end of the season, he sent another survey asking how much money they spent, on what, and questions about snowmobiling policy.

Bastian developed a

random utility model to interpret results.

"I found there were two types of snowmobilers to come to Yellowstone," he says. "One is the single destination snowmobiler (SDS) – someone who comes to a site, then goes home. That was about 60 percent of the people.

"The other 40 percent were multiple destination snowmobilers (MDS). They view Yellowstone as their major winter vacation spot. It is their main reason to come here. These visitors snowmobile in the park and then snowmobile at several other sites in the region during their vacation. They go home and don't return until next year."

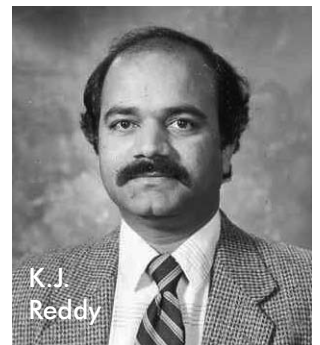
The impact of SDS would not be great if Yellowstone was closed "but not MDS," he says. "More than half said they would not come to the region. Yellowstone is the draw. The economic impact is much greater with that group."

Bastian says his study suggests total full-time jobs lost to the region surrounding the park could range from 620 to 3,630. The impact in lost wages could be from \$11.5 million to \$68 million.

Yellowstone is in the middle of a NPS three-year policy of allowing four-stroke snowmobiles, mandating guides for snowmobilers, and capping the number in the park at 750 per day.

The issue could be reexamined after the third year.

Bastian has forwarded his results to the NPS and hopes to present his study to the agency and also make presentations in Jackson Hole and other GYA communities.



Arsenic removal process promising

Professor K.J. Reddy's break-through method of removing arsenic from drinking water is having world-wide ramifications.

Reddy, of the Department of Renewable Resources, says he discovered the process by accident while trying to remove selenium from drinking

T I N G



water. He found that laboratory-produced ARTI-64 particles can remove arsenic to below detectable levels. From that accidental discovery, a licensing agreement resulted between the university and Metal Arsenic Removal Technologies Inc. Now, four major companies are marketing the product world-wide.

"I want to acknowledge my students for their contributions and my colleagues," he says. "There is a constant encouragement from my colleagues to go on to the next level."

Long-term exposure to arsenic in drinking water causes cancer of the skin, lungs, urinary, bladder, and kidney, and other skin changes such as pigmentation and thickening, according to the U.S. National Research Council. The council recommended to the Environmental Protection Agency to lower current allowable arsenic levels for drinking water from 50 micrograms per liter to 10 micrograms per liter. This will be effective January 2006.

Reddy says he had not been aware of the magnitude of the problem of arsenic in drinking water. "People used

to think arsenic was only a problem in Southeast Asia," he says. "Then the entire U.S. was surveyed along with global arsenic concerns. It showed arsenic was not just a problem in Southeast Asia but all over. The discovery has societal, world-wide implications."

The magnitude of the invention surprises Reddy, who says he had spent seven years working on the selenium removal process and knew little about arsenic and its devastating health problems.

"I've learned quite a bit in the last two years from the research. I'm not an expert in arsenic. I work in trace metals. But I am learning. I love to take this into the classroom and show the students that 'don't think everybody knows everything about something.' Now, I know more about arsenic, but I'm still in the process of learning more about it."

The novelty of the invention is its simplicity, he says. The simple, cost-effective method will enable utilization by poorly developed countries. "People are dying from drinking arsenic-rich groundwater and need a simple, effec-

tive, inexpensive method to remove arsenic," he says.

The process is now featured on the United Nations Environment Programme.

The research also complements his work with natural minerals and the way metal oxides cycle trace metals in nature.

Reddy says having scientists and other researchers test the results is satisfying as is knowing one has created something that may benefit society.

"My wife died of cancer. I know the problem at the human level," says Reddy. "If it can save even one life – fine. That will be satisfying."



Donna Brown

Wedding ensemble on world tour

A winter wedding ensemble designed and made by Associate Professor Donna Brown of the Department of Family and Consumer

Sciences is part of the prestigious Bernina Fashion Show that will tour nationally and internationally the next two years.

The dress "Romancing the Snow" is one of 47 selected for the tour. "It's a distinction to be invited," says Brown. "It's probably the ultimate honor. It's when you know you have gotten somewhere."

The tour, titled "Inspiration," is sponsored by Quilts Inc. and Bernina® of America. Designers must be invited to participate.

The ensemble makes its debut October 22 at the International Quilt Market in Houston, Texas. The public premiere is October 27 at the International Quilt Festival, also in Houston.

This is the second time Brown has had an item selected. Those who have participated can notify Bernina® they are interested in having an item in the show.

The idea for the ensemble sprang from wanting to try a particular technique, Brown says.

All items in the show are a Size 10. Models are provided to display the garments. Brown estimates she

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spent at least 700 hours on the one-of-kind item.

As the deadline approached, she says, “15- to 16-hour days were pretty common. I had some 20-hour days to get it done. I’d lie down and take a nap for a couple of hours then get back to work.”



‘Select Agent’ laws tightened

The Department of Veterinary Sciences has recently seen the importance of being able to mesh diagnostic work with basic research.

The department handles diseases such as brucellosis and the plague, which are labeled Select Agents by the government, and which have tighter regulations how animal and public health laboratories handle

these agents, says department head Donal O’Toole. Other agents are also handled, including rabies and tularemia. Tularemia is also known as “rabbit fever,” and it is caused by the bacterium *Francisella tularensis*.

In June and July, the department diagnosed four cats from southeast Wyoming with plague. One month earlier, personnel had diagnosed plague in a black-footed ferret. Last October, a blind deer found wandering in the hills east of Laramie was shot by hunters, and it was confirmed to have the plague. The diagnoses were made in Professor Ken Mills’ laboratory.

Mills worked with the Wyoming Department of Health to make sure that people exposed to infected animals go on prophylactic antibiotics immediately. His laboratory also identified tularemia in a cat in the Big Horn Basin.

“Thanks to the speed with which cases were diagnosed and good communication with the Wyoming Department of Health, nobody became ill,” notes

O’Toole. “Some 10 to 15 people in the United States get plague annually. As long as they receive effective antibiotics promptly, the prospects for recovery in patients are good (85 percent). Prospects are not as good for plague patients who do not go to their doctor, or receive an incorrect medical diagnosis, or get the wrong antibiotics. Mortality rates in this group are in the 50- to 90-percent range.”

The department regularly deals with the rabies virus. “Recently, a young child was bitten by a bat in Big Horn Basin, and the bat needed to be checked for rabies,” says O’Toole. “A quick-thinking veterinarian with the Wyoming Department of Health used his personal credit card to get the bat on the last flight that day out of Worland and to Laramie. A staff member picked up the sample at the Laramie airport. A rapid test confirmed that the bat was rabid. This ensured that the health department got the child on post-exposure vaccines and antiserum.” The child did not develop rabies.

One goal of the veterinary sciences department is to have one secure space dedicated to the diagnosis of Select Agents and another for basic research, O’Toole says.

“The Wyoming Department of Health has been helpful in financially supporting the equipping of such laboratories using money from the Department of Homeland Security. The laboratories are restricted to department members who received security clearances by the FBI,” he notes.

“From a teaching standpoint, it is valuable for our medical microbiology and pre-veterinary students to be instructed by faculty members who routinely diagnose and work with hot agents like these,” says O’Toole. “When they begin their careers and work with these agents, the students’ knowledge about the safe handling of these agents safely will be practical and applied since it was acquired from Wyoming professionals who work with them on a regular basis.”



Steve Miller, interim head of the Department of Plant Sciences in the University of Wyoming College of Agriculture, describes weed research in wheat during an open house at the UW Sustainable Agriculture Research and Extension Center.

New Agriculture Experiment Station director's focus always on helping state's producers

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

A hot mid-June sun shoved those attending an industry weed plot tour toward picnic tables sitting in cool shade under cottonwoods at the Sustainable Agriculture Research and Extension Center (SAREC) near Lingle.

A breeze fluttered the cottonwood leaves above. Below, barbecue stoves and coolers of refreshments waited patiently for use at the end of the day. Stephen D. Miller had just announced over a bullhorn to

industry representatives he would become the new associate dean and director of the Wyoming Agricultural Experiment Station (AES) effective August 23, replacing Jim Jacobs. Jacobs then took the bullhorn and said he had wanted to make sure Miller had said something about taking over. With that, participants climbed aboard a flatbed trailer pulled by a pickup. Miller, professor and interim head of the Department of Plant Sciences, was last to climb the steps to the flatbed hay bales. This, his 16th annual Southeast Wyoming Weed Tour, was his last.

For being a weed science man, cows played a large influence in charting Miller's life. Miller grew up on a Front Range dairy farm near Platteville, Colorado. He attended Colorado State University after high school graduation, and everyone assumed he would major in animal science because of his roots.

No. "There was no way I'd major in animal science," Miller says. "Cows were more important to my dad than his kids. I did a lot of milking, getting up at 4 a.m. I never did enjoy it. We had a few cows that kicked, and one day I got kicked by a cow and I

kicked the cow back. I got hit by a 2 by 4 from my dad."

Miller laughs about it now, of course, but the dairy farm also had a production agriculture side. "I really enjoyed that growing up," he says. "We had alfalfa and corn. We watered out of an irrigation ditch that had the oldest water rights on the South Platte River. My great-grandfather helped dig it."

Miller's life course was determined by an aversion to anything cow. "I thought we could maximize our crop production better than we were," Miller says. "I felt the farming opera-

“He’s always been a hard worker. He gets more things done than two people. Farmers and ranchers have tremendous respect for the information they get from Steve.”

—Tom Whitson, professor emeritus, plant sciences

tion played second fiddle to the cows. I thought there were a lot of ways to improve crop production. That’s why I went into agronomy.”

Miller decided to attend graduate school rather than return to the farm (which remains in the family – minus the dairy cows). He had many school offers but chose a fellowship at North Dakota State (NDSU) in Fargo. “The farthest away from the dairy farm,” he quips.

His wife, Bonnie, laughs about her husband’s aversion to cows.

“He always told me he hated milking and working with cows,” she says. “He saw his dad being tied down to that dairy. Whatever he did in life was not going to have anything to do with dairy.”

NDSU’s faculty was another factor.

“When he went to North Dakota State and had talked to his adviser, John Nalewaja, he found it was something he very much wanted,” Bonnie says. “Dr. Nalewaja was highly accomplished. Steve very much wanted to be the best in the United States.”



Steve Miller makes a point during an open house at the UW Sustainable Agriculture Research and Extension Center.

Miller jumped at the opportunity. “North Dakota is the most agricultural state in the nation. I got good training in the agronomy and weed sciences,” he says.

Miller would work as a graduate student under Nalewaja (now professor emeritus) and later with him as a colleague.

“I’m real proud of Steve,” Nalewaja says from his home in Fargo. “I always have been. You think you are a ‘know-it-all’ professor, but actually, I learned more from Steve

than what I gave him. He was a dynamo as far as work. His intelligence is the big thing. He has a tremendous memory. I would ask him about when a certain article was published, and he’d say, for example, ‘July 1976.’ Remarkable.”

Bonnie confirms her husband’s memory. “I have an antique business, and just the other night I asked Steve when we had purchased something, and he said April 2002. I went to my inventory books and it was April 14, 2002. He has a remarkable memory.”

Miller’s attention at NDSU gradually began to focus on weed science. “I spent a lot of time out in the fields, and I could see the impact weeds were having on crop production,” he says. The area of expertise was also something he could take anywhere.

Miller earned his master’s and Ph.D. in four and a half years. The timing was right. An assistant professor position opened at the university, where he remained for 11 and a half years before joining the faculty of the University of Wyoming.

Asked who was most influential in his life, Miller doesn’t hesitate – Nalewaja.

“He instilled in me the importance of the hard work of really directing research to answer questions that are a concern to growers and producers in the state,” Miller says. “He also instilled in me you had to go out and write and get grant money to do the type of research you wanted to do.”

Miller was a student who a professor dreams about having, says Nalewaja.

“He has tremendous honesty. If he does grant work for a company, he’ll

tell them exactly if it is good or bad,” says Nalewaja. “People learn Steve will be honest, and they respect that. He doesn’t sugarcoat anything. When he says it is the way it is, it is, and then he backs that up with his intelligence.”

Miller married Bonnie (from Douglas, which ironically is Steve’s middle name) and they had two sons. In 1984, a position opened at UW. Miller was attracted by the program that former professor of weed science Harold Ally had created. There were also other factors. The temperature in Fargo the winter before never got above zero for 31 consecutive days. “That hasn’t happened since,” says Miller, who smiles. The couple also wanted to have their

sons, Jason and Eric, closer to their grandparents.

Miller says he had two goals in mind when he came to UW. “I really wanted to train as many students as possible and answer as many questions as possible the farmers were throwing out at me,” he says.

Tom Whitson, professor of weed science (emeritus) and extension weed specialist, had an office across from Miller’s. He’s known Miller since 1983.

“He’s always been a hard worker,” says Whitson, who himself still works one day a week at the research and extension (R&E) center in Powell in addition to his agricultural operation.

“He gets more things done than two people. He’s certainly been very accurate in his research. Farmers and ranchers have tremendous respect for the information they get from Steve.”

Miller believes he’s seen increased interaction between the College of Agriculture and Wyoming residents. “There are always conflicts and problems, but the ag college has tried to do a real good job of involving the citizens of Wyoming in what we are



Steve Miller (right) talks with Kurt Jones of Syngenta Crop Science of Elizabeth, Colorado.

doing,” he says. “All in all, I’d say the interaction has improved. The Department of Plant Sciences probably has the best outreach in all corners of the state.”

Miller will be in charge of research at the three R&E centers: Powell, Sheridan, and SAREC.

Increasing faculty involvement at the R&E centers is one goal Miller has. Miller says he will be in the position four years and then plans retirement.

He had regrets when he finished his weed tour last June. “I won’t be interacting a lot with the chemical industry people and weed and pest people. That’s something I will miss. I really enjoyed working with all of them,” he says. “I never aspired to administration.”

He says he became interim department head by default. “Nobody else would do it. Administration was the last thing on my mind. I wanted to be a weed scientist and solve as many problems as I could and provide as many solutions as I could for the growers.

“But as associate dean and director, who deals with research, one of my real loves. Not that I don’t enjoy interacting with students.”

That area, he says, is his greatest accomplishment.

“I trained 45 graduate students,” he says. “Twenty-five of them are master’s and 20 are Ph.D.s. All are gainfully employed in some phase of agriculture across the country.”



A black metal SAREC sign stands ready to be installed.

Wyoming farmers could help fuel

by Robert Waggener,
Editor

*Office of Communications
and Technology*

Production of biodiesel is on the rise, and a University of Wyoming College of Agriculture agronomy specialist says he believes Wyoming farmers have an opportunity to turn oil-producing crops into cold cash.

Professor Jim Krall, who is stationed at UW's Sustainable Agriculture Research and Extension Center (SAREC) near Lingle, says a number of oil-producing plants including winter and spring canola, brown mustard, and camelina can be successfully grown in several areas of the state.

"There is enough processing capacity out there right now, and I think there will be enough demand," says Krall, who notes that biodiesel production climbed from less than 500,000 gallons to 124 million gallons in the past six years. "This is really a drop in the bucket when you consider the amount of diesel that is be-



At the wheel, Jerry Nachtman, a research associate at the Sustainable Agriculture Research and Extension Center near Lingle, drives a tractor as plant breeder Charlie Rife seeds a trial plot with brown mustard. Rife previously conducted research at Kansas State University and now operates a private plant-breeding business in Torrington.

ing burned in the country right now, but the figure is increasing." Citing federal figures, he says, the country in 2002 consumed 136 billion gallons of gasoline and 36 billion gallons of diesel, 60 percent of which came from imported oil.

Krall says there are 26 biodiesel production facilities in the United States, and the majority of them are in the Midwest. Most of the biodiesel is coming out of the soybean producing states as soybean is rela-

tively high (25 percent) in oil concentration.

Twenty-five facilities are either under construction or are proposed including one planned near Alamosa, Colorado, says Krall, who adds that a facility is being discussed for Wyoming.

"A group in Wyoming is actively looking at putting up a facility. They still have a number of questions, and we're offering advice," says Krall, who met with the group in late

June. Also attending was Jack Cecil, a research scientist at SAREC, and representatives of the Wyoming Department of Agriculture and the Wyoming Business Council.

"There are some financial incentives out there that are stimulating biodiesel production and the building of new plants," Krall continues. "High fuel prices are helping to drive construction. Additionally, one of the provisions of

demand for 'biodiesel' crops



College of Agriculture Agronomy Specialist Jim Krall, left, and Research Associate Jerry Nachtman display brown mustard being grown this year in plots at the Sustainable Agriculture Research and Extension Center in southeast Wyoming.

a bill signed by President Bush last year reduces the excise tax on diesel. For every 1 percent of biodiesel that is added to traditional diesel, the excise tax is cut by a penny.

"A lot of these blends are running 20 percent biodiesel, which I take means a 20-cent reduction in excise taxes per gallon. For recycled cooking oils from fast-food restaurants and other places, it's a half cent," Krall notes.

In Wyoming, he says, there currently are no incentives for biodiesel, but as of 2001 there is a 40-cent-per-gallon producer credit for ethanol.

Biodiesel is a biofuel produced through a process called transesterification, in which organically derived oils are combined with ethanol or methanol in the presence of a catalyst to form ethyl or methyl ester.

The esters can be blended with conventional diesel fuel or used as a "neat

fuel," which is 100 percent biodiesel. The fuel can be made from the oils of soybean, rapeseed, or other crops having high concentrations of oils. It can also be made from animal fats or waste vegetable oils from sources such as restaurants.

"If exhaust coming from a vehicle smells like French fries, the vehicle is burning biodiesel," Krall says with a laugh.

Krall and Cecil are members of a regional biodiesel crop develop-

ment team that is testing plant varieties, determining establishment practices including the best time to plant, and researching optimal growing conditions. Weed control methods are also being tested.

Other team members are from Colorado State University, University of Nebraska, Kansas State University, South Dakota State University, U.S. Department of Agriculture's (USDA) Agricultural Research Service, and Blue Sun Biodiesel. Much of the research is being funded by U.S. Department of Energy (DOE) grants passed through Blue Sun.

"Blue Sun has been awarded several DOE and USDA grants to breed and commercialize new proprietary oilseed varieties for biodiesel production," Krall says.

Canola, brown mustard, which is a relative of canola, and camelina, a broadleaf plant that looks similar to mustard, are under test at SAREC as well as on private farm lands in the Albin area.

(Continued on page 10)



Professor Jim Krall, a College of Agriculture agronomy specialist stationed at the Sustainable Agriculture Research and Extension Center near Lingle, gives a presentation on biodiesel to students and faculty members in the UW Department of Plant Sciences.

“Canola looks attractive from an economic standpoint,” says Krall, who notes that irrigated canola trials at SAREC last year produced 2,000 pounds per acre, which equates to approximately 100 gallons of biodiesel. Another reason is because of Roundup Ready canola, which offers good weed control, he notes.

Krall points out that drought affected dry land brown mustard yields last year, but the irrigated crops were good.

“We’re also very interested in camelina because it’s an early producer,” Krall says of the upright growing plant that produces a very small oil-producing seed. “We’re quite interested in camelina because our early

research indicates it is quite drought hardy.”

The early-producing plants could be harvested in time to still plant irrigated wheat, and equipment used to harvest wheat can also be used to harvest the oil-producing crops, he notes.

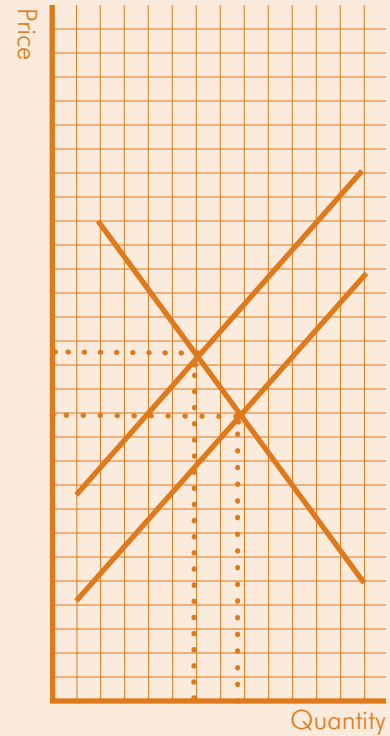
One drawback to biodiesel, Krall says, is that it begins to jell at a higher temperature than conventional diesel, but there are many advantages of the organically derived fuel compared to conventional petroleum diesel including higher octane ratings, higher lubricity, a higher flash point (this makes biodiesel safer), and less pollution (it meets 2007 federal sulfur emission standards and California’s clean-diesel standards).

“Even without the current high fuel prices, there would probably be an increase in demand as the vegetable oil is approved to replace sulfur as a diesel fuel lubricant additive.

“These are some of the things that make biodiesel promising,” says Krall, who emphasizes that the research at SAREC and on private farms in south-east Wyoming will examine costs to grow oil-producing plants in the state compared to the potential economic returns. “That is something we certainly need to look into. We’re enthusiastic about this research, but we’re still learning a lot.”

Studies will also look at other potential uses for crops such as canola, brown mustard, and camelina. “We’ll be looking at the value of these crops in Wyoming for livestock feed as the plants should be high in energy and protein. If we introduce a crop, it’s important for producers to realize there are alternative uses for the crop, and that they aren’t restricted to one market,” Krall says.

On the Web: www.biodiesel.org
www.panhandle.unl.edu/biodiesel/index.htm
www.gobluesun.com/



Dale Menkhaus



Chris Bastian

Researchers in experimental economics lab watch behavior, crunch numbers to find ag policy effects on markets

by **Steven L. Miller,**
Senior Editor

*Office of Communications
and Technology*

Researchers may not feel anyone pulling the reins of their horses and farmers may not feel anyone helping drive their tractors, but the invisible hands of economists are surely guiding agricultural operations in their study of markets.

Funding has been approved to create an experimental economics laboratory in the Department of Agricultural and Applied Economics (AAE) with plans to have it operational by 2006.

The \$95,425 price tag would put the laboratory in the College of Agriculture building with computers, cubicles, software, and needed infrastructure changes.

College of Agriculture economists have already put their behavior-observing powers to the test in experimental markets. The AAE also has received a \$250,000 grant from the U.S. Department of Agriculture to study effects of potential farm policy instruments. That study has to rely on experimental economics because the policies have not been implemented – there are no data available.

Adam Smith, considered the father of modern econom-

ics, first penned his “invisible hand” theory in 1776 – that the invisible hand of competition transforms self-interest into the common good. Those invisible hands work just as well in laboratories as real life.

“We can’t observe everything in the naturally occurring laboratory of the real world,” says Dale Menkhaus, AAE professor whose specialties are marketing, price analysis, and markets. “We do like researchers in agricultural sciences or physics. We move into the lab setting to answer some of the questions for which we have no data for.”

Behaviors of buyers and sellers in today’s agricultural market structures change rapidly or are not observable. “Our option is to create a market in a lab setting. Students are the subjects – the buyers and sellers,” he says.

Using college students within four walls to predict what buyers and sellers will do in the real world is not as off base as at first glance. The researchers provide alternative market conditions and stand back and watch human behavior.

It seems students struggling to earn money will react the same way as any buyer or seller.

“We know depending upon how we set the market

up what the competitive outcome will be,” says Menkhaus. “If the result is different, then we have to identify why that is. We try to understand based on a theory or we develop new ways of looking at behavior.”

The procedures are like a plant scientist conducting an experiment, says Chris Bastian, assistant professor in the department. The scientist has an idea and develops an experiment. There is a control group and a treatment group, and effects are then measured.

Researchers create a competitive market in their lab. Then they change the circumstances. “We shock the market and see what the effect is,” says Bastian.

The changes, if any, can be observed through many production cycles.

Bastian, who worked as an agricultural marketing specialist for the University of Wyoming Cooperative Extension Service since 1993, says he has heard a number of issues that concern producers.

They can be examined in the experimental lab.

“One is that producers have asked or made statements they think beef packers are changing prices from competitive to something less. The premise is that a few packers have market power – few packers control price. The problem

is no one has been definitely able to prove this,” he says.

But based upon work in an experimental economics lab, researchers have developed answers.

“Concentration, or a high share of business by a few packers, does enhance market power under certain circumstances but not others,” says Bastian. “Concentration alone does not give packers market power.”

The power of experimental economics could affect how new farm programs might help producers stay in business, Bastian says.

“There are a lot of questions producers have,” notes Menkhaus. “This is a way to obtain data.”

The researchers can try to understand the changing structure of agriculture without roping a calf or sweating a decision whether to enter a new commodity market.

“We’ve been doing this type of research for 10 years and hope the new lab will allow us to obtain the funding to continue to address relevant issues and questions using experimental economics methods,” say Menkhaus and Bastian.

On the Web: www.uwyo.edu/AgEcon/Default.HTM

Isotope lab installs \$500,000 in new

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

As this is being read, oxygen, nitrogen, carbon, or perhaps even hydrogen atoms are accelerating – happily bobbing, swaying, and bumping into each other along their journey – and then separated into their respective atomic weights with their isotopes falling into collectors.

Six to 12 minutes to a sample. Fully automatic.

Shikha Sharma, College of Agriculture Stable Isotope Facility associate director and research scientist, smiles with delight as she talks about the new \$500,000 machines installed in June in Room 2023 AgC. Funding came from the National Science Foundation and several academic units including the College of Agriculture and the Department of Renewable Resources.

The machines can be set up to run 50 to 80 samples at one time with great ease compared to the

older machine.

Shiny tubes and vent hoses string down from the ceiling to the machines. Green and brown ultra high purity gas bottles stand at attention. Cables from the machines connect to a desktop computer. Once completely operational, researchers will be able to see their sample results by simply logging onto the lab's Web site.

"Isotopes are atoms of the same element," Sharma patiently explains, "with the same number of protons but different number of neutrons, and this results in a mass difference between the two. The new machines have the capability to separate these atoms or rather ions with different masses and then measure their relative abundance in a sample."

When a gas containing different isotopes of an element (^{12}C and ^{13}C in CO_2 for instance) enters a mass spectrometer, it is ionized in the ion source. The positive ions are accelerated by high voltage, and this ion beam enters a

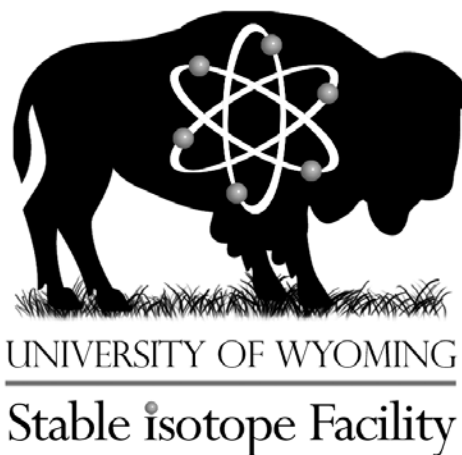
magnetic field where ions are separated according to their masses and focused on to the collector. Here, the electric charge is transferred to the metal collectors, resulting in electric currents. From ratios of these currents, the isotopic ratios of original gases can be determined. Each current is proportional to the partial pressure of the respective component in the gas. The isotopic compositions are calculated by the integrated software.

Many departments within the University of Wyoming use the laboratory, but because of its former limitations,

some samples had to be sent elsewhere. That will probably stop now, says Sharma, who came to UW in March from Iowa State University.

There has always been a steady stream of samples from UW faculty members, researchers, graduate students, and from other researchers across the country.

"I was surprised to see how many researchers from many different departments were interested in this facility," she says. "The isotope lab is so interdisciplinary with much collaborative work. That's what makes it so good. When I came here, I met people in bot-



testing equipment

any, geology, zoology, and the College of Agriculture. I was impressed to note the interest of all departments in the development of the isotope facility. There is an opportunity to do various types of studies.”

Isotopes can help researchers determine nitrogen-fixing abilities of crops by measuring the ratio of nitrogen isotopes in the plants and soil. Researchers conduct trace studies to determine how much nitrogen is used by a plant, how much is fixed in the soil, how much is going back into the atmosphere through denitrification, and how much is leached into water runoff.

“There are many applications,” she says. “In botany and ecology, people are using it to trace sources of water for plants by looking at the oxygen and hydrogen isotopes in the plant, rainwater and soil water. There are people trying to address various questions related to below-ground carbon cycling with the help of carbon isotopes. In zoology, researchers study animal migration. They

trace where the animals are coming from by comparing the isotope composition of animal tissue to areas of origin. It’s useful especially for migratory birds. They are also being used to track diets of animals.”

There are other applications beside plant or animal. Sharma was involved with one while at Iowa State University in Ames, Iowa. “I have a Ph.D. in geological sciences, and I have been involved in studies related to the use of stable isotopes in understanding modern environmental processes and to interpret past environments,” she says.

“My main project at Iowa was the reconstruction of the paleoclimate in the Great Lakes region back 4,000 years by looking at the oxygen, carbon, and nitrogen isotopes from peat deposits of the area.”

Sharma, originally from India, was principal investigator of a project dealing with palaeoenvironmental reconstruction in the northern part of India using isotopic data from shells and organic matter from lake deposits

and teeth from archaeological deposits. She worked on this project for about three years in Germany and said she garnered very promising results.

“Paleoenvironmental time-series produced by this project provided a crit-

ical regional data set from the Indo-Gangetic Plain, which lies in the heart of the most intense and poorly understood monsoonal signal,” she says.

On the web: www.uwyo.edu/dgw/isotopelab.htm.



Shikha Sharma prepares test samples in the College of Agriculture Stable Isotope Facility. Sharma, who is associate director of the facility, says the new machines can test 50 to 80 samples at a time.

AG APPRECIATION

The College of Agriculture's outstanding alumni, research/outreach partner, and legacy winner for 2005 will be honored October 7 and 8 as part of Ag Appreciation Weekend, a celebration of the importance of agriculture to Wyoming's history, culture, and economy.

Cynthia Lummis, the Wyoming state treasurer, and Richard Taggart, chief financial officer for Weyerhaeuser Co., will be honored as the outstanding alumna and alumnus, respectively

The Wyoming Beef Cattle Improvement Association has been named the Outstanding Research/Outreach Partner of the Year for its work with the college to continually improve beef products to fit consumer needs and generate higher prices for producers.

Glyda May of Wheatland is the Legacy Award winner. Glyda and her late husband, Woody, provided support for the Cliff and Martha Hansen Livestock Teaching Arena, agricultural youth leadership programs in Wyoming, and to help establish a wildlife-livestock disease faculty position at UW.

The schedule includes:

October 7

- Dean's Ag Appreciation Dinner honoring Cynthia Lummis, Richard Taggart, Glyda May, and the Wyoming Beef Cattle Improvement Association.

Those wishing to attend the Dean's Ag Appreciation Dinner may make reservations by contacting the College of Agriculture Development and College Relations Office at (307) 766-3372.

October 8

- 23rd annual Ag Appreciation Day Barbecue, Tailgate Park.
- University of Wyoming versus Texas Christian University - Kickoff TBA

Tickets for the barbecue can be purchased at the event or before October 3 from the Ag Development and College Relations Office. Food for the barbecue is provided by Wyoming producers with animal science department student organizations preparing the meal. Proceeds provide scholarships for College of Agriculture students and help fund various agriculture college student organizations. Ag Appreciation Weekend football game tickets may be purchased by calling the UW Athletic Department Ticket Office at (800) 922-9461. A block of seats has been reserved for alumni and friends.

Richard Taggart climbs

by Robert Waggener,
Editor

*Office of Communications
and Technology*

Richard J. "Dick" Taggart has ascended a mountain of trees to sit on one of the top financial jobs in the world. His duty: to manage the budget of a Fortune 200 company having annual sales of more than \$22 billion.

Taggart's trail to becoming chief financial officer and an executive vice president of Weyerhaeuser Co. started in Evanston and at the University of Wyoming, where he earned bachelor's and master's degrees in agricultural economics in the late 1960s and early 1970s. He specialized in natural resource management.

Taggart's success in the business world and the military are among the reasons he was selected a 2005 Outstanding Alumnus for the College of Agriculture.

"I am extremely honored by this recognition knowing that UW and the ag college were partly responsible for my success. I have a tremendous sense

of identity with the state of Wyoming and the university," says Taggart, who lives in the Seattle, Washington, area.

Taggart proudly states he attends as many UW alumni events in his state as he can, and he is a member of the Ruckelshaus Institute of Environment and Natural Resources board.

"Dick elevates the reputation of UW and the College of Agriculture through his accomplishments, and he exemplifies how alums can make contributions for the benefit of UW faculty members and students," wrote Ruckelshaus Director Harold Bergman in a letter recommending Taggart for the honor.

Weyerhaeuser President and Chief Executive Officer Steven Rogel stated in his nomination letter that Taggart's educational background in agricultural and natural resources combined with his "deep financial capability" has given him a unique perspective and expertise in the forest products industry.

WEEKEND

mountain of trees to land Fortune 200 job

Rogel calls the Wyoming native his “right-hand, trusted adviser” who has gained respect throughout the financial world. In 2004, *Institutional Investor* magazine asked portfolio managers and financial analysts to choose their top-performing chief financial officers, and they selected Taggart as the best CFO in the paper and forest products industry. (Weyerhaeuser is one of the world’s largest integrated forest products companies, with operations in 19 countries.)

“Dick has not forgotten his Wyoming roots. The sign on his desk reminds us all that ‘Cowboys Do it All,’” Rogel stated.

Taggart was raised in Evanston, and after graduating from Evanston High School in 1960, he enrolled at UW. “It was a school of a manageable size for a kid from a small town. I felt ‘comfortable’ there, and I felt I could access a lot of things. Looking back, I was not only fortunate to attend UW but to be in a program that required



me to take classes in a lot of different areas. I took chemistry, biology, zoology, and a number of courses in the business school and economics department. I took a class on water law in the law school and a lot of math,” he recalls.

“I graduated with a very good grounding in the fundamentals of how mar-

kets work, which became important later because the market behavior in the forest products industry, which produces many commodities, is similar to other agricultural markets. I learned about things I

didn’t know. One of the most important things to know is what you don’t know,” he emphasizes.

Taggart says he has always tried to seek out the best advice he could, and UW was no exception. For example, he notes, “Dr. Andrew Vanvig, who was head of the ag econ department at the time, was my adviser. He was a quiet, gentle, thoughtful man who gave me a lot of good advice. His direction has been very valuable.” (Professor Vanvig now spends his summers on a farm in North Dakota and his winters in Arizona.)

Asked about the road he traveled to become Weyerhaeuser’s top money

boss, Taggart replies with a laugh, “It’s not a straight line.

“When I left graduate school during the Vietnam War, they had eliminated draft deferrals for grad students so the draft board

let me finish course work toward my masters,” says Taggart, who completed his thesis while serving in the Navy. “Because of the math and physics I took at UW, the Navy sent me on an operations research assignment at the applied physics lab at Johns Hopkins University.”

The assignment required Taggart to learn several computer languages. Those languages were very primitive compared to today’s programs, but it was another important step in his career. “We used computer models for war-game simulations. This was my introduction to large statistical models and computer simulations. That

has benefited me a lot over the years to understand the strengths and weaknesses of large computer models.”

Taggart was hired by Ford Motor Co. in 1970.

(Continued on page 16)

outstanding alumnus

AG APPRECIATION

Richard Taggart

(continued from page 15)

He worked in operations research and systems development until 1974, when he joined Weyerhaeuser as a project manager in information systems. He then rose through the ranks, holding positions in industry analysis, business and corporate planning, and financial management.

“One of the things that helped me is to have a mindset of lifelong learning. I have gone back to college to take a series of accounting classes to become a CPA. I encourage others to continue to learn and continue to be exposed to as many things as you can, and find a way to be valuable to other people. I didn’t learn it real quickly, but I learned that somebody pays me a lot because I am creating a lot of value for them, and I recognize that value. Seldom do successful people get to where they are on their own.”

Taggart and his wife, Mary Lou, have two children, Emily and Joseph.

Cynthia Lummis bucks status quo

by Robert Waggener,
Editor

*Office of Communications
and Technology*

“Status quo” isn’t in the dictionary of Cynthia Lummis.

Growing up on a Herford ranch near Cheyenne, Lummis decided at a young age to raise shorthorn cattle for her 4-H project. “That allowed me to be a little different than my family,” she recalls.

Putting age and gender aside, Lummis at age 24 campaigned hard to become the youngest woman in the Wyoming Legislature. She was later elected state treasurer and became the first woman to serve



Cynthia Lummis

“Wyoming had the overall largest gap in pay of any state.” The Institute for Women’s Policy Research (IWPR) in 2000 reported that Wyoming women were making only 63 cents for every dollar men made. This was only 3 cents higher than the national average two decades ago, when women earned just

heightened awareness in Wyoming, which is the first step to solving the problem,” Lummis says.

These are among the reasons Lummis has been selected a 2005 Outstanding Alumna for the College of Agriculture.

She earned bachelor’s degrees in animal science and biology from the University of Wyoming in the late 1970s and a law degree in 1985. She is a member of two UW boards: the Ruckelshaus Institute of Environment and Natural Resources and the College of Business Advisory Council.

“Cynthia recognized from an early age that her effectiveness in contribut-

outstanding alumna

on the Cheyenne Frontier Days board.

Not afraid to buck the status quo, she took on Wyoming’s staggering wage discrepancy between men and women. When that challenge started a couple of years ago, Lummis says,

60 cents on the dollar, according to IWPR findings.

“One of my goals was to raise awareness about the issue and to encourage employers to look within their ranks to see if any gaps exist. This is a long process, yet I do believe there is a

ing to agriculture could be enhanced by achieving a position of leadership within the state,” stated Steve Horn, a professor in the Department of Animal Science, who recommended Lummis for the honor. “Her experiences with the

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to help Wyoming prosper

animal industry and her respect for the ranching culture have always been evident in her public service.”

Lummis says her success in public life goes back to her private life in agriculture. “Ranching taught me about hard work and being continually responsible for the stewardship of the livestock and the land. I gained a love for Wyoming and its wide-open spaces, even though I learned that working during wind and snowstorms is not always fun. I am not out irrigating or feeding cattle much anymore with my job as treasurer, but it will not surprise me if I return to that in the future.”

Lummis would later talk about her future, but she first wanted to share about her education at UW. “My animal science degree included a large number of elective courses, and I used those electives to take a very broad-based curriculum. I felt I came out with a well-rounded education, and that was a benefit when I returned to law school.”

During her sophomore year, she studied overseas in the Third World and in countries with emerging economies. “It was an eye-opening experience for a 19-year-old who had never left Wyoming. It gave me an opportunity to see firsthand how other governments and economies work or don’t work and the living conditions of people in the Third World.”

That experience kindled Lummis’s interest in government, and during her senior year she interned in the Wyoming Legislature, working with the Senate Agriculture, Public Lands and Water Resources Committee. Lummis says she now finds it ironic she would later pass state laws and set policy with the same senators she interned with.

“It was a unique time when I ran. It was during the post-Watergate years, a time when non-traditional candidates were in vogue. Every woman in Laramie County who ran for public office that year was elected. A couple of years earlier would have been more difficult.”

Hoping her achievements encourage other women to set high goals, Lummis emphasizes, “A rising tide lifts all boats.” She then says that all young people can better prepare for the future by taking classes in subjects they know nothing about. “I would encourage UW students to look very seriously at starting businesses or building their careers in Wyoming. One way to do this is to seek internships outside of the state that can bring you back here. We need Wyoming’s bright young people who understand the state’s culture and lifestyle yet have had exposure to a wide array of educational opportunities and experiences.”

She also urges them to tap into the wisdom of their teachers. “I admire many of my professors at UW not only for their wonderful teaching skills but their ongoing commitment to Wyoming and its people.” Among them, she says, are retired ag college professors Mick Botkin, Conrad Kercher, and Mel-

vin Riley, who continue to live in Laramie.

Asked about her future, Lummis says her term as state treasurer ends January 2, 2007, but state law prevents her from seeking reelection to that office. “Right now I am leaning toward returning to the private sector, but I know occasional opportunities will arise that are of political interest to me. I’ve learned never to say ‘never.’”

Professor Doug Hixon, head of the Department of Animal Science, echoed those sentiments in a letter recommending Lummis for the honor. “I predict that although Ms. Lummis has amassed a tremendous list of accomplishments during her career, her high profile service has just begun.”

Lummis and her husband, Cheyenne attorney and businessman Al Wiederspahn, have one daughter, Annaliese, a student at Haverford College, in Haverford, Pennsylvania. Annaliese is studying this fall in the Czech Republic.

AG APPRECIATION

Wyoming Beef Cattle Improvement Association's

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

This year's Outstanding Research/Outreach Partner can trace its beginnings to 1984 when University of Wyoming Cooperative Extension Service personnel and a group of Wyoming beef producers formed the Wyoming Beef Cattle Improvement Association.

The association's aim is to better position itself in the marketplace by producing beef that consumers want and are willing to buy. The end result is a win-win for everyone – better quality beef that consumers want to buy which increases demand and enhances profitability.

Larry Morrison of Lingle is association president. "Everybody I've talked to is thrilled about our selection," he says. "There are so many times we feel we are working undercover. It's hard for us to get our programs out so people know about them. We have to educate the commercial

cattle producer as to what we are trying to do."

Doug Hixon, department head and professor in the College of Agriculture's Department of Animal Science, organized the first meeting of the WBCIA in January 1984.

He was a beef cattle extension specialist at the time. "There was no beef cattle genetic improvement organization at that time," says Hixon. An earlier beef performance association was no longer functional.

"I knew that many of the economically important traits involved in beef production systems were from 30-percent to 50-percent heritable," Hixon says. He spent two years assessing the needs of the Wyoming beef industry and visiting with extension educators and producers. They concluded that organized attention should be given to the genetic components of beef cattle production.

"We wanted to draw attention to the importance of the genetic contributions to beef cattle production systems and their economic importance," says Hixon.



Doug Hixon

A feedlot test and carcass evaluation program were established the first year to attract the interest of the commercial beef industry. A bull test and sale were established the following year. Since its inception, the WBCIA has also added an annual educational symposium as well as a live beef evaluation associated with the Wyoming State Fair Fed Beef Contest. Ultrasound technology has also been incorporated to provide noninvasive estimates of marbling and rib-eye size in bulls and as a tool for predicting optimum finished endpoint in the feedlot test cattle.

The Pingetzer Bull and Heifer Development Center in Shoshoni administers the bull and heifer tests for



Steve Paisley

the WBCIA. The WBCIA feedlot test and carcass evaluation program is administered by Klein Farms at Wheatland. All programs are open to anyone who wants to find how their animals stack up against others. Producers are asked to consign a minimum of five animals in the feedlot test. Owners are identified by a coded number to assure that this program remains a test and not a contest. It is then the decision of the owner as to how that information is best used.

The Cooperative Extension Service has helped administer some of the testing programs and assisted producers in giving leadership to some of the educational programs, says Hixon. Extension

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work with UW creates better product

educators Jim Gill in Big Horn, Hot Springs, Park, and Washakie counties, and Ron Cunningham in Fremont County and the Wind River Indian Reservation, have been involved with the bull test from the beginning. Extension educators Wayne Tatman and Phil Rosenlund of Goshen, Laramie, and Platte counties, and Frank Henderson of Converse County have been involved in the heifer development program and feedlot test and carcass evaluation program.

In more recent years, extension educators Alex Malcolm (Fremont County) and Dallas Mount (Platte County) have also been involved with these programs. Steve Paisley, animal science assistant professor, was hired as the beef cattle extension specialist at UW in October, 2001, and he assumed the role of WBCIA executive secretary shortly thereafter.

Better genetics can have a positive effect on a producer's bottom line. The WBCIA Bull Test's purpose is to evaluate performance differences among ani-

mals that are managed in a common environment. "And 35 percent to 45 percent of those differences are due to genetics," says Morrison. The performance information goes back to seedstock producers to aid selection decisions in their own herd as well as in those of their customers, helping to genetically match cattle to their environmental resources.

Research has also shown there are genes that can determine the marbling, the rib-eye size, and tenderness, says Brad James of the association.

The WBCIA is producer-driven with a goal to provide a higher quality product for the consumer.

"It was aimed at the producers and their ability to provide beef more efficiently," says James. "We try to identify the genetics to do that. It's the best way to take care of the consumer. It's the lady in the grocery store who pays our bill, and I think at times there has been a disconnect between producers and the consumers. We need to address it."

Hixon says the land-

grant university system is a good source of research-based information. "CES is an unbiased entity when it comes to collecting data and packaging that data in a form that can be appropriately marketed and utilized," he says.

The relationship works both ways. "The association has added credibility to educational programs and generated funding through the development of the Beef Symposium Committee that has worked in association with the WBCIA Bull Test to generate financing that has gone to support scholarships and internships for students who are interested in being involved in the beef industry in Wyoming," notes Hixon.

The WBCIA has a specific goal to develop those youths who seek careers in some aspect of agriculture. The Beef Symposium Committee coordinates an art auction that provides seed money for \$1,000 scholarships and \$1,500 internships. The group has awarded more than 25 since the scholarship program started in 1999.



Members of the Wyoming Beef Cattle Improvement Association include, from left, Gordon Booth and Mary Ann Booth of Veteran, Brad James of Lusk, and Larry Morrison of Lingle.

Scholarships and internships are available to students who have completed at least one year of post-high school education in any Wyoming college or university, says Mary Ann Booth of the association. Students attending professional schools such as veterinary or medical school out-of-state but who meet the other requirements can also apply. Winners are selected by a committee which evaluates applications and interviews finalists.

Students interested in applying should contact Paisley at (307) 766-5541 for additional information.

On the Web: www/wbcia.org/index.htm.

outreach partner

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AG APPRECIATION

Legacy Award winner's emphasis always on youths

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

This year's Legacy Award winner accepted the honor with her typical unpretentiousness.

"I haven't done anything outstanding," says Glyda May of Wheatland.

There are those who would disagree.

While May seeks to avoid the limelight, she's proud of the accomplishments of she and her late husband, Woody.

The two built their feedlot operation and ranch near Wheatland from meager beginnings. May has lived all but nine months of her life in Wyoming. Woody, who also lived most of his life here, died in 1976.

May helped establish the Cliff and Martha Hansen Livestock Teaching Arena west of Laramie, provided assistance to help establish a wildlife disease faculty position at UW, and helped create a 4-H endowment to develop leadership skills in youths.

The emphasis is on young people. "Possibly because we didn't have any kids," says May. "But we helped a lot of other kids. It's a way to get them started. I worked four years for the Agriculture Adjustment Administration, known as the AAA, and, being housed in the county agent's office, made me more aware of what UW does."

May's interest in UW was also nurtured by two nephews and a great niece graduating from UW. Dennis Utter, a nephew of Glyda and Woody, says he couldn't think of anyone more deserving for the Legacy Award than Glyda.

"My mother died when I was 3, and they were like substitute parents to me," says Utter. "My gosh, all of the people in the community really looked forward to being with them. They were always involved in youth events and encouraging the youth. It was a lifetime work for them. They did it very quietly. They were not in search of recognition or praise."

May has always been interested in youths, says



Glyda May

longtime friend and neighbor Vi Goodrich. "She doesn't do it for recognition. She is interested in what the kids do – 4-H, the horse shows. She's been a good community supporter."

May has also always been involved in local activities. Her parents helped start the Platte County Farm Bureau. She still is a member.

She's also served as a superintendent of the open class needlework show at the Platte County Fair for many years, says Christine Pasley, University of Wyoming Cooperative Extension Service educator for Platte, Goshen, and Laramie counties.

"She is always there to help," says Pasley. "She supports extension really well, particularly in the agricultural area."

May is also involved outside her local community. She was a member of a review team from Platte, Laramie, and Goshen counties that began studying the UW Agricultural Experiment Station's research and extension centers in southeast Wyoming. Their eventual recommendation was to develop the Sustainable Agriculture and Research Extension Center (SAREC) near Lingle.

She recognizes the importance of natural resources not only to agriculture but to all Wyoming residents. May had served on the Wyoming Community Foundation. John Freeman, the foundation's founding manager, recalls an early board discussion. "We went around the table asking directors what they considered the most critical issue facing our state," says Freeman. "Some hesitated through indecision and others through

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disagreement, until we got to Glyda. Without giving it a second thought, Glyda decisively uttered ‘water!’ – really the scarcity of water – as our number one challenge.”

Nine-month-old Glyda had bounced along with her parents and twin sisters in the early 1920s as they traveled to Wyoming from Clark County, Iowa, to settle near Walcott. Her dad worked different ranches for two summers and one winter before moving to near Wheatland in October 1922. Glyda was 2. She still remembers riding horseback to school with one twin ahead of her on the horse and the other twin riding behind.

“Woody was raised the hard way,” she says. His parents moved a lot.

Woody’s parents had put up a tarpaper shack to homestead in eastern Montana. His mother came up from the root cellar one day to see fire destroying her life. Her two young sons died in the October blaze. Woody was born the following January.

Glyda met Woody while working for the American Automobile Association in Wheatland, an association that also housed the county extension office. Woody’s parents had purchased a ranch near Wheatland and he was busy farming and fattening out 2,500 head of lambs annually.

“During World War II that was pretty important,” she says. “They sheared the lambs six weeks before marketing them as fat lambs. The lamb hide was used for aviation suits. I still have one around her somewhere. They made good tractor-riding pants in the wintertime. The outside was leather, but the inside was wool. They were heavy but warm.”

Glyda and Woody married August 9, 1942 and the couple purchased their ranch and irrigated farm in 1945 and started feeding out yearling steers for a better living.

“It kept you real busy,” she says. “You didn’t have time to go to town to play golf?”

They crossed their Herefords with Angus

then with Charolais.

“They were called ‘May’s rainbow herd,’” May says, and laughs. “Our rate-of-gain with Charolais beat Hereford and Angus all to pieces.”

Goodrich first came to know the Mays in 1954 and says they were always good stewards of the land. “They ranched up in the mountains. They were never known to overgraze or abuse property,” says Goodrich.

“They were very careful to move cattle around in pastures to take care of their ground. They weren’t out to get every ounce of grass off of it. They always left something for wildlife and next year. They always looked toward the future.”

Just before Woody died, they had put their place up for sale, and the operation was sold after his death. She kept and resides in the new house they had lived in for eight years and five acres it sits on.



Glyda May with a fabrication of the brand used by her and her late husband, Woody, at her home near Wheatland.

“Woody had always wanted to travel,” she says. “The first place I went was Alaska. That’s where Woody wanted to go. I traveled until I wore out my traveling partners!”

Goodrich still takes May to the National Western Stock Show in Denver. Goodrich’s son, James, is livestock manager of the show. “We cover the whole thing. She never complains. She is always positive,” Goodrich says.

legacy award
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Collin and Taylor Bradford jump in the multi-purpose area of the Early Care and Education Center. The youths are the children of Luke and Crystal Ballard, who is the pre-school lead teacher at the center.



Early Care and Education Center consolidates facilities; expands instructional efforts

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

An August 24 celebration marked the opening of the new \$2 million University of Wyoming Early Care and Education Center.

The 9,220-square-foot training and research laboratory at 30th and Lodgepole streets is a joint effort of the colleges of Agriculture and Education. It consolidates the former UW Child Care Center, Child Development Center, School-Age Care Program,

and College of Education Pre-K program, and it also allows for the addition of infant and toddler care.

The facility will accommodate 90 to 100 children and will serve the instructional needs of about 300 students annually.

“This is really a wonderful opportunity to consolidate several of our facilities. It is truly an interdisciplinary effort,” says College of Agriculture Dean Frank Galey.

“In addition to providing care for our children, it will provide a good, positive learning experience for our college students who will have that important role in later years in taking care of kids all over the state and region.”

College of Education Dean Patricia McClurg says, “The more we learn about human development, the more we realize the critical importance of rich, early childhood educational experiences. This growing research base coupled with changing national demographics has resulted

in a growing demand for knowledgeable early childhood professionals.”

McClurg says she is confident the Early Care and Education Center will properly prepare these professionals, and that it will positively impact the quality of early childhood education throughout the region.

“We’re excited to see 15 years’ worth of dreaming and planning coming to fruition,” says Karen Williams, associate professor and head of the Department of Family and Consumer Sciences.

“We really will have a facility that can educate and train a variety of professionals who will work with children and families in multiple settings: teachers, family specialists, counselors, psychologists, nurses, social workers, dietitians, speech pathologists and audiologists, and others.”

Mark Bittner, coordinator of the Child Care Center and the Child Development Center,

and Cleta Booth, a pre-K teacher and apprenticeship supervisor with the UW Lab School, will co-direct the new facility.

“A facility where both state-of-the-art materials and strategies can be modeled and where research furthering our understanding of the complexities of human development can be conducted is an asset to the University of Wyoming,” notes McClurg.

Special features include a multipurpose area for gross motor activities, parent meetings, and multi-age programs; a breastfeeding support room; an on-site nursing station with temporary sick-child facilities; a science/solar room to encourage children’s understanding of nature and how to grow plants; an observation room with computers and video capabilities to better serve college students’ training needs; and a full kitchen with child-sized space to encourage cooking and nutrition-awareness activities.



The entrance to the University of Wyoming Early Care and Education Center.

PROGRAM NOTES



Nicole Ballenger

Agricultural and Applied Economics

Richard Taggart, chief financial officer of Weyerhaeuser Co. and alumnus of the agricultural and applied economics department, has been selected as one of this year's College of Agriculture Outstanding Alumni.

Professor **Nicole Ballenger**, head of the Department of Agricultural and Applied Economics in the College of Agriculture, will begin a one-year term as associate vice president for academic affairs effective July 1.

Assistant Professor **Chris Bastian** and Associate Professor **Don McLeod** have been awarded a U.S. Department of Agriculture National Research Initiative grant in the amount of \$380,000 to study the market for conservation easements with a focus on incentives for producers and landowners to participate in the program.

William Biles, a resident of Tie Siding, former owner and CEO of small rural banks in the Midwest, and an MBA from the Wharton School at University of Pennsylvania, will teach agricultural finance in the fall for the department. Biles is also developing a new course on ag and rural banking for the spring semester.



Associate Professor Paul Ludden

Animal Science

Wyoming State Treasurer **Cynthia Lummis**, a graduate of the Department of Animal Science, has been selected as a 2005 Outstanding Alumna for the College of Agriculture.

Animal science graduate students **Chuck Murrieta** from Los Angeles, California, and **Becky Atkinson** from Lingle placed in a regional animal science competition in June.

Murrieta won \$300 for placing second with his

paper at the 2005 Western Section, American Society of Animal Science (WSASAS) annual meeting at New Mexico State University in Las Cruces while Atkinson received \$200 for finishing third.

Murrieta and Atkinson are Ph.D. students completing degree programs in animal nutrition.

Evaluation was based equally on an oral presentation and a written manuscript, says **Doug Hixon**, department head and professor.

"They, along with **Terrill Weston**, an M.S. student in animal nutrition from Lander, also received the WSASAS Institutional Award, which is worth \$2,000. Out of the three years the award has been presented, University of Wyoming animal science students have won it twice," Hixon says.

"We are proud of the accomplishments of these young scientists as well as Associate Professor **Bret Hess**, Associate Professor **Paul Ludden**, and Professor **Dan Rule**, who mentor their graduate programs and assisted them in preparing for this competition," Hixon adds. "They did a super job of repre-

senting our department, the College of Agriculture, and UW."

In other department news, Ludden was honored as one of this year's recipients of the John P. Ellbogen Meritorious Classroom Teaching Award. The honor, which is named after the late **John P. Ellbogen**, is to reward excellence in classroom teaching.

UW Livestock Judging Team Coach **Lance Miller** reports, "We had a very successful 2005 Cowboy Youth Classic Livestock Show at the Cliff and Martha Hansen Livestock Teaching Arena in June."

The event attracted approximately 175 people from nine Wyoming counties and four Colorado counties. It included workshops on beef, sheep, and swine fitting, showing, nutrition and management, food safety, and livestock quality assurance. There were also livestock shows and judging competitions.

The 10th annual classic is being scheduled for late June 2006.

PROGRAM NOTES



Family and Consumer Sciences

While many students use summer to relax, Department of Family and Consumer Sciences' students took advantage of opportunities to learn and earn credits while they traveled.

As they did so, they were also strengthening their competencies in professional development and diversity – two of the areas in the department's electronic portfolio student assessment system.

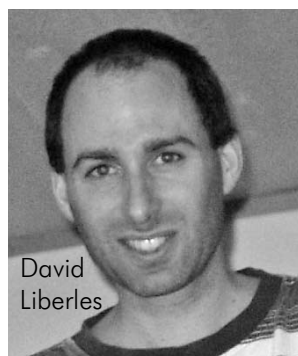
Associate Professor **Sonya Meyer**, family and consumer sciences, and Professor **Jean Schaefer**, head of the Department of Art, took a group of students to Italy in May as part of a University of Wyoming Innovative Summer Course award. Students had the option of taking Art 4720 15th Century

Renaissance Art for three credits and/or FCS 4104 Field Studies: Fashion and Design Study Tour of Italy. Fourteen students took one or both classes for credit.

Associate Professor **Karen Williams**, head of the Department of Family and Consumer Sciences, accompanied the group to get a better feeling for the students' experiences. "Not only did the students learn to appreciate cultural differences, but they got to see works of art and textile processes that they would normally only see in textbooks. I was impressed with the students' reflective journals and the follow-up papers and projects that deepened the learning," she says.

Students didn't have to leave the country to have out-of-the classroom learning experiences. Professor **Virginia Vincenti** and Meyer took a group of students to the American Association of Family and Consumer Sciences' (AAFCS) 96th Annual Conference and Exposition in Minneapolis, Minnesota. Seven students, officers, and members of the Wyoming student AAFCS chapter chose to broaden their perspectives by

attending student leadership workshops, poster presentations, keynote addresses, and research presentations. A credit option under FCSC 4104 Field Studies: FCS Career Tour was available.



Molecular Biology

David Liberles will join the College of Agriculture Department of Molecular Biology this December as assistant professor.

Liberles is senior scientist/group leader at Computational Biology Unit, University of Bergen in Bergen, Norway. He is a bioinformaticist working on evolution at the level of protein.

Liberles received his bachelor's degree in biology from Oberlin College in Oberlin, Ohio, his master's degree from California Institute of Technology in Pasadena, California, and obtained a Ph.D. from the

Caltech two years later. He worked as a postdoctoral researcher in the Department of Chemistry at the University of Florida from 1997-1999 and was assistant professor from 2000-2003 in the Department of Biochemistry and Biophysics at Stockholm Bioinformatics Center in Stockholm, Sweden. In 2002, he was the senior scientist in the computational biology unit at the University of Bergen.

"My strongest base of knowledge lies at the interface between biology and chemistry, particularly in areas related to genomics and evolution," states Liberles.



Plant Sciences

The Department of Plant Sciences had seven graduate students finish their degree program during the summer:

Pawika Boonyapipat – Ph.D., advisers Professor Gary Franc and Don

Roth, dean of the Graduate School,

Heidi Smith – Ph.D., adviser, Professor Fred Gray,

Dennis Calvin Odero – M.S., advisers Professor Stephen D. Miller and Abdel Mesbah, research scientist,

Ryan Rapp – M.S., advisers Miller and Dave Wilson, associate lecturer,

Christy Jo Reedy – M.S., adviser, Gray,

Katherine Nelson – M.S., advisers Professor Emeritus Ron Delaney and Mesbah,

Myrna Ulmer – M.S., adviser Gray.

In addition, five new graduate students will start their program:

Kelly Carpenter – M.S., adviser, Assistant Professor Rik Smith,

Caley Gasch – M.S., adviser, Assistant Professor Stephen Enloe and Steve Williams, a professor in renewable resources,

Azize Homer – Ph.D., adviser, Associate Professor Robin Groose,

Emmanuel Omondi – M.S., adviser, Smith,

Tanya Skurski – M.S., adviser, Enloe.

Several new research programs were initiated this year including a sustainable agriculture research extension project on ley farming, biodiesel production, organic grass pea production, rodent predation of weed seeds, soil persistence

of amino pyralid, invasiveness of black henbane, and development of invasive weeds, notes **Steve Miller**, interim head of the Department of Plant Sciences.



George Vance

Renewable Resources

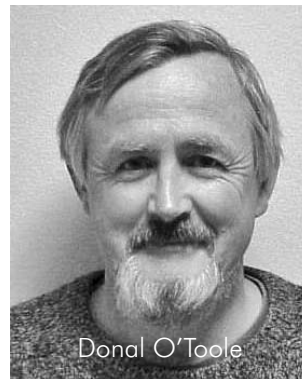
Research by **Angela Hild** in shrubland ecology has targeted the sagebrush steppe and national involvement with assessing risk of extinction and habitat conservation plans for sage grouse in the sagebrush steppe. She is initiating a project to assess wildlife habitat and management decisions at Browns Park National Wildlife Refuge on the Green River in northwestern Colorado. Closely related research considers re-vegetation following wildlife and entry of exotic species in the Intermountain West and Snake River Plain.

Alex Latchinsky, assistant professor and extension entomologist in the Department of Renewable Resources, is working internationally with Mauritania

and Kazakhstan, Russia, on locust problems affecting those countries.

Assistant Professor **Tim Collier** has been working with weed and pest control districts statewide in research using biocontrol and integrated weed management approaches to control undesirable plants.

Professor **George Vance** is researching several environmental management issues. The first, carbon sequestration in forest ecosystems, is important for identifying carbon depletion and/or storage levels. The second is seeking applied reclamation practices for saline/sodic soils in the Southwest. He is also studying coal-bed methane effects from a soil chemistry standpoint.



Donal O'Toole

Veterinary Sciences

One of the major activities of the Department of Veterinary Sciences involves high-consequence infectious disease agents. Some of these will be

familiar to people in the state, particularly *Brucella abortus*, which causes the disease brucellosis in cattle, says department head **Donal O'Toole**. Less familiar may be other agents that are resident (endemic) in Wyoming, most of them in wildlife. These include the cause of the Black Death ("plague" – *Yersinia pestis*), tularemia ("rabbit fever" – *Francisella tularensis*), Q fever (*Coxiella burnetii*), rabies, and salmonellosis, among others.

"An unfortunate side effect of the 9/11 tragedy and the letters containing anthrax was a tightening of federal regulations governing how animal and public health laboratories handle these agents," says O'Toole. "It created additional financial and legal burdens for researchers and institutions that wish to retain isolates for investigation and research."

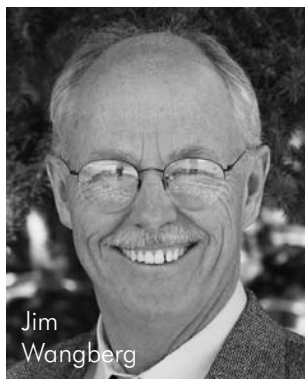
When the new Select Agent rules came into effect, many laboratories around the United States decided that long-term storage of these agents would be an expensive, bureaucratic headache. Once they make a positive identification of agents such as the plague bacillus, the laboratories destroy the isolate. The downside is that these isolates can be invaluable for research, and

PROGRAM NOTES

people are being driven to destroy them rather than retain them for further investigation, O'Toole says.

Wyoming is one of the last states in the United States with bovine brucellosis. Because of that fact, the veterinary sciences department must be able to identify and store isolates of the agent, particularly if it wants to continue research on the disease. It has been working with the Centers for Disease Control and Prevention to ensure it can do this. Several graduate students in the department are doing important work on strains of *Brucella abortus* that are transmitted from elk to cattle, says O'Toole.

One faculty member, Assistant Professor **Gerry Andrews**, recently received funding to identify features of the agent that may allow for the development of subunit vaccine candidates. Andrews will work with a colleague in animal science, Assistant Professor **Larry Goodridge**, to develop a rapid test kit to be used in the field for detecting infection in elk and bison.



Academic and Student Programs

The College of Agriculture's Brand of Excellence scholarship program has grown in the last decade to provide more than 80 student scholarships in excess of \$250,000.

"The college is committed to making a UW education accessible to all qualified students. The strength of our scholarship program helps to attract the finest, most diverse students and to assist those who cannot meet the increasing costs of education," says **Jim Wangberg**, associate dean and director of the Office of Academic and Student Programs.

"Scholarships have become an important factor in our recruitment and retention goals. Our enrollment figures are on a steady increase, and we continue to attract the best and the brightest students," he says.

The college's undergraduate enrollment climbed from 799 in the fall of 2003 to 844 last year.

The Brand of Excellence program and annual banquet are coordinated out of the office, which includes Wangberg; **Pepper Jo Six**, recruitment coordinator; **Kelly Wiseman**, staff assistant; and **Kaycee Nelson**, office assistant.

The scholarship application is due February 1 each year. A faculty scholarship committee selects recipients based on academic and leadership excellence. Only students enrolled in the College of Agriculture are eligible.

"Our scholarship recipients and the generous donors who make the program possible are recognized at our annual scholarship banquet. It gives administrators and faculty and staff members the opportunity to congratulate our students on their outstanding achievements," Six says.

This year's banquet is Friday, September 23, at 6 p.m. in the Crane-Hill banquet room.

"This special event also gives us the chance to thank the college's friends who provide us the ability to offer financial support to our

students. Please join us this fall as we continue this long standing tradition of recognizing academic excellence in the college," Six adds.



Agricultural Experiment Station

Professor **Stephen D. Miller**, interim head of the Department of Plant Sciences, is the new associate dean for research and director of the Wyoming Agricultural Experiment Station (AES).

Miller replaces **Jim Jacobs**, who returned to the Department of Agricultural and Applied Economics on a nine-month faculty appointment.

"I'm really excited about having Steve join our AES team. He brings a tremendous amount of experience and wisdom to the college, and I feel Steve will help take the lead as we serve the college's strategic plans and sustainable agriculture and research related to the state's natural resources," says Col-

lege of Agriculture Dean **Frank Galey**.

In other AES news, **Justin Moss**, a horticulture and turf-grass expert from Oklahoma, was hired as the new director of the Sheridan Research and Extension Center. "I would like to establish myself as a turf-grass specialist for the state, and I hope to be a resource in that capacity through extension work and research," says Moss, who moved to Wyoming from the Stillwater, Oklahoma, area.

Moss earned a bachelor's degree in horticulture and landscape architecture in 2000, a master's in horticulture with an emphasis in turf grass science in 2002, and a Ph.D. in crop science this year. All three degrees are from Oklahoma State University-Stillwater.

College of Agriculture personnel had a chance to show the public the new Sustainable Agriculture Research and Extension Center (SAREC) near Lingle during two open houses this summer.

More than 100 attended. They were able to see research plots that have started on the 3,800-acre farm and livestock operation. "I got a lot of positive feedback," says SAREC Director **Jim Freeburn**.



Linda Melcher

Cooperative Extension Service

Linda Melcher, director of the Cent\$ible Nutrition Program (CNP) in the Department of Family and Consumer Sciences, accepted a position as nutritionist in the Food Stamp Nutrition Program with the U.S. Department of Agriculture in Dallas, Texas. She started August 8.

"We will really miss Linda. Her contributions to the University of Wyoming Cooperative Extension Service have been nothing short of exceptional," says **Glen Whipple**, associate dean and director of the UW CES. "Linda's leadership has taken a small, low-income nutrition education program offered in just a few communities in Wyoming to a nationally recognized program reaching families in every county of the state."

Melcher started her career at UW 27 years ago, joining CES two years later as the Expanded Food Nutrition Extension Program coordinator, says **Susan**

James, Federal Relations and Staff Development coordinator for UW CES. "Linda has received national recognition for her creativity and dynamic leadership of CNP."

In other CES news, **Heidi Harris** is the new agriculture and natural resource educator for Big Horn, Hot Springs, Park, and Washakie counties. She received bachelor's degrees in animal science and agribusiness from Oklahoma Panhandle State University in Goodwell, Oklahoma, and a master's in animal science/reproductive physiology from the University of Nebraska-Lincoln. She replaces **Troy Cooper**, who accepted a similar position in Ohio.

Relatedly, CES has three new 4-H program associates. They include **Daleena Babcock**, Goshen County; **Susan Parker**, Carbon; and **Reatha Thomas**, Sheridan.

Babcock is a spring 2005 graduate of Oklahoma State University-Stillwater with a bachelor's degree in agriculture education. She was named the outstanding senior in her program at OSU. She replaced **Ron Kaufman**, who retired after 15 years as the 4-H educator in Goshen County.

Parker earned a bachelor's degree in business

administration from Georgia State University and a master's in forest resources from the University of Georgia with an emphasis on education and recreation. She replaced **Warren Crawford**, who accepted a position as youth development specialist in the state 4-H office in the College of Agriculture.

Thomas has a bachelor's degree in English from Trevecca University in Nashville, Tennessee, and returns home to Sheridan after serving as chief executive officer of the Florida Ridge Big Brothers Big Sisters (BBBS) and executive director of the BBBS program of Yellowstone County, Montana. She replaces **Lise Foy**, who resigned last year.



Anne Leonard

Ag Development and College Relations

This summer plant sciences Professor **Fred Gray** took 16 agroecology program students on an eight-day field trip. During the

trip, students studied historical and current agriculture systems in Colorado and Arizona. Students were exposed to both traditional high-production irrigated agriculture as well as the ancient subsistence farming practices of the Anasazi and Hohokam people. The purpose of the trip was to help students see theories they had studied in class put into practice.

“What was rewarding was the fact that this program received a grant from our *Beyond the Classroom* program – a program funded entirely by alumni and donors,” says **Anne Leonard**, director of Ag Development and College Relations.

Scholarships are another concrete example of how donors’ contributions make a difference, she says. This

summer, the college offered 189 deserving students full or partial scholarships totaling \$291,761 for the upcoming academic year. These awards were funded either by a permanent scholarship fund or through an annual gift.

“To these students, your gifts have made a real difference,” she says.

“This summer, the college was privileged to host Dr. **Pavel Ivanov**, an international expert in biophysics and DNA microarray data analysis from Moscow State University (Moscow, Russia). He and Professor **Mark Gomelsky** of our molecular biology department collaborated on computational biophysics projects and developed exchange programs for graduate and undergraduate students,” says Leonard.

This visiting faculty opportunity was supported, in part, by a grant from the Global Perspectives endowment in the College of Agriculture. Global Perspectives is another program funded by a gift from a friend of the college, she says.

“The mission of Ag Development and College Relations is to provide quality educational, research, and outreach programs to Wyoming and the world. Gifts from alumni and friends of the college make a tangible difference in our ability to achieve these goals,” says Leonard.

“On behalf of our students and faculty, thank you to the many donors for helping the college reach new heights.”

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