



AG NEWS

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Dear Friends and Colleagues,

After a long dry summer and fall, it looks like the state is finally getting a bit more moisture as this is being written. It has been a busy fall, with our ag appreciation dinner and advisory board meeting being the highlights so far.

This office has spent most of the season working on our next five-year academic plan. The basis for much of what is going into the plan came from our visioning sessions with you around the state. As a result of that and other inputs, you will be seeing this college continue to focus on the research, teaching, and extension/service that make up the backbone of our mission. We will be focusing on developing our programs in agricultural systems, natural resource management, rural economics and communities, and the life sciences. I received input on an initial draft plan in the fall, and a final version will appear on the Web.

We had another very productive meeting with the College of Agriculture's advisory board in association with our Ag Appreciation Weekend. The board discussed our campaign to attract private funding for our programs and projects, reviewed department activities, and discussed the draft academic plan. Please see the article in this issue about the meeting for more details.

Also in our winter *Ag News* you will find articles about Pepper Jo Six's recruitment efforts, a College of Agriculture alumnus who is now a frontier doctor, growing grapes in Wyoming, some of the college's connections with Australia, a new wool color-measuring machine (reflectance colorimeter) being used in collaborative research by two faculty members, Quilting in the Tetons, a nutrition project in Iran, highlights from an agro-terrorism conference, and feature articles about projects underway at the research and extension centers.

Please look over our academic plan and this spring be on the lookout for the university-wide draft plan. Please comment on that university plan. It will have a large impact on how this college fares. As I mentioned in the last issue, your voice does count. I hope you have a great winter, and please stay in touch with your college.



Dean Frank Gale explains ideas proposed in the new academic plan at a college advisory board meeting.

"Whether you think you can or think you can't – you're right."

Henry Ford

Dean Frank Gale
College of Agriculture

Frontier doctor values rural roots in

by Vicki Hamende,
Senior Editor

*Office of Communications
and Technology*

Diane Noton decided when she was 5 that she wanted to become a doctor. She also knew that she wanted to stay close to her rural roots.

Now 35, she practices frontier medicine in Saratoga as the owner of the Platte Valley Medical Clinic and is the only doctor outside of Rawlins in Carbon County and the only female doctor in the county who serves adults as well as children. She even makes house calls.

"I love it! I couldn't imagine doing anything else," Noton says.

Her Peryam ancestors were the third family to inhabit Encampment 125 years ago. Both of Noton's great-grandparents attended the University of Wyoming. Her great-grandfather played Cowboy football, and her grandfather, also a UW alum, was a track runner.

Noton grew up spending summers in Encampment and knew she eventually wanted to settle there.



Dr. Noton demonstrates how to use a whirlpool in her treatment room.

She and her husband now live on a ranch in the small community, and her parents and sister are also Encampment residents. Noton's 15-mile trip to Saratoga each day requires "just three turns," she says, smiling.

The valedictorian at Meeteetse High School in 1986, Noton says her home economics teacher was her role model since the town had no doctors. "She got me interested in nutrition," Noton recalls. That interest led her to follow her family's path to UW, where she earned a degree in the College of Agriculture's Department of Family and

Consumer Sciences in 1991. Professor Michael Liebman was her adviser, Associate Professor Rhoda Schantz one of her mentors. "There isn't a lot of nutrition training in medical school, so what I learned at UW made for a perfect combination with my future studies," she says.

Graduating cum laude, Noton earned her medical degree in 1995 at Nebraska's Creighton University, which was UW's medical contract connection prior to its partnership in WWAMI through the University of Washington. After a three-year family prac-

tice residency in Casper, she worked for a short time in Jackson until homesickness drew her south.

Despite the fact that she would be increasing her already bulging medical debt and that she wasn't sure if she could run a business, Noton bought the Saratoga clinic from its retiring physician when she was 30. "Here I am five years later," she notes, with a staff of 10 that includes two physician's assistants, nurses, and support personnel. "If I stay until the year 2034, I will have been only the third doctor in a century to serve the area," she adds.

The youthful practitioner has gradually moved out of the shadow of her predecessor, building her own authority and respect. The clinic handles 10,000 patient visits per year, and colorful posters, cards, gifts, and homemade cookies attest to the community's appreciation.

In the tradition of the true frontier medical practice, Noton sees and does it all without a hospital or colleague nearby to back her up.

Wyoming

"I make house calls and ride on ambulances when the need arises. I go to scenes of accidents all the time," Noton says.

"We are in such a unique situation because in other parts of Wyoming where there's a clinic there's usually a hospital. Very few places are as remote as this. I don't feel like we do anything extraordinary here, it's just that we are isolated," she says. Noton recalls one case when she and her team successfully "shocked" a man's heart back to life. "He's now my biggest fan," she adds.

On evenings and weekends Noton works alone in the clinic when she receives emergency calls. "I check the patients in, measure their vital signs, take x-rays, draw blood work from them, and proceed from there with what needs to be done. After hours, it's just me. That's when your stress level goes up," she says.

"I find my work exciting although there are some people who might think it would be easy to do what I do. Doctors who live in the cities and haven't walked in my shoes might not under-

stand what it's like to practice alone and not have anyone to support me at any given moment," Noton explains. "It can get scary."

She is grateful to physicians and specialists throughout Wyoming who are a phone call or an e-mail away. "I crave interaction with other doctors, and they are so good to me. I learn something every time I talk to one on the phone and they give me feedback about a patient." One specialist made a "house call" to Saratoga when Noton needed medical care herself. A doctor in Rawlins services the area if Noton is away.

The young woman also heaps praise on her physician's assistants and nurses for the medical care they provide and on the rest of her staff for welcoming patients and helping to operate the clinic. "I have a talented and outstanding group of people to work with," she notes.

The facility maintains state-of-the-art equipment and a top-notch ambulance service, Noton says, thanks to the generosity of the people in the Saratoga area

who set up a medical foundation to gather donations to build the clinic and to provide medical care for people without insurance.

There are four examining rooms, an emergency room, an x-ray room, a laboratory, a treatment room, and a variety of equipment ranging from an electrocardiogram to a whirlpool in the modern facility. A busy nurse's station and a cheerful waiting room complete with a display case of historic medical equipment, including her great-grandfather's veterinarian's bag, also greet patients and visitors.

Noton helps people of all ages, referring them to specialists and setting up appointments in places like Laramie and Rawlins when necessary. "In rural medicine you have to know what you can treat and what you can't treat. I send

them to the hospital sooner rather than later," she explains. "There are a lot of things I know how to handle, but I can't always do it in this setting."

The physician says she sees "an incredible range of pathology" among her patients. "There are many conditions that haven't been taken care of because
(Continued on Page 4)

*Dr. Diane Noton
in her office at the Platte
Valley Medical Clinic in
Saratoga.*



“Somewhere along the way somebody saw a potential in me, and that allowed me to go to medical school. Now it’s my turn to give back.”

people have never come to a doctor. I wouldn’t be seeing the same things if I were practicing in a city.” Noton also believes that some people who wouldn’t go to a doctor in the city would come to a clinic like hers. “I think they really appreciate having us here,” she adds.

In addition to serving as the medical adviser for the Saratoga Police Department Emergency Medical

Dispatch Program and the medical director of the Saratoga-Encampment Ambulance Service (“If it has the word ‘medical’ in it you can tell I’m involved,” she jokes), Noton is the medical director of the 45-bed Valley View Nursing Home in Saratoga, making regular rounds to treat the residents there.

She helps to organize a community health fair every year, conducts medical

examinations on Head Start students, and offers free sports physicals for local athletes. To meet her continuing education requirements, Noton attends advanced certification classes to receive advanced certification and also teaches courses to medical residents.

Noton is currently the vice president of the Wyoming Board of Medicine, an organization that grants licenses to practice, oversees disciplinary actions, and creates policies. She was asked to participate by the governor’s office. Noton is also a member of the WWAMI admissions committee for the University of Washington Medical School.

Her other medical involvements include membership in the American Academy of Family Physicians, the Wyoming Academy of Family Physicians, the Wyoming Medical Society, the National Association of Rural Health Clinics, the Wyoming Primary Care Association, the Corbett Medical Foundation Board of Directors, and the Platte Valley Medical Board.

She enjoys traveling in connection with her affilia-

tions. “I don’t want to feel like I am being a loner out here,” Noton explains. Eventually she would like to earn a master’s degree in public administration.

Another goal is to strengthen her connections with UW. She has been a guest speaker at campus gatherings and hopes to help aspiring physicians coordinate their undergraduate class work to enhance their future medical training.

“Somewhere along the way somebody saw a potential in me, and that allowed me to go to medical school. Now it’s my turn to give back,” she says. “People encouraged me and helped me, and I think it’s important to do that for the next generation. That’s why I like to be involved. I want to see that attitude perpetuated.”

Noton believes that returning to her rural roots to be a doctor was meant to be. She laughs as she tells a story about a youngster who always says “That’s Diane’s house” when he goes by the clinic. “I will never leave here,” she says. “This is it. This is my life.”



An electrocardiogram enables Dr. Noton to monitor heart recordings.

Corn yield increases with narrow rows



Professor Steve Miller explains the results of corn studies being conducted at the UW research and extension centers.

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

Can corn producers in Wyoming increase their yields by decreasing the space between crop rows?

Findings from a project at the College of Agriculture's Torrington Research and Extension Center indicate a thumbs-up.

Third-year results from research under the direction of Professor Steve Miller show that corn planted 15 inches apart yielded 160 bushels per acre while 30-inch row spacing produced 152. Creating a pattern, a 22-inch separation resulted in 158 bushels per acre. A total of 32,000 plants per acre was tested in each trial.

"The project showed what we were hoping it would show," Miller says.

In addition, there was less weed growth in the narrow rows since the corn utilized more of the soil area and was able to intercept light and crowd out the unwanted plants.

"If we space out the plants more efficiently, they can receive more sunlight and be better photosynthesizers and produce more grain," Miller explains. He also says the narrower row spacing makes it less likely that nutrients will leach out of the profile and that weeds will utilize the moisture.

Results after two years of trials gave the yield nod to the 22-inch rows, but crops that blew over in heavy winds weren't used in that count.

Should farmers pay immediate heed? Yes, if they use sprinkler irrigation. "The big question now is can we furrow irrigate 15-inch rows," Miller notes. "Can we furrow

enough ditch with that area of space and still be able to get water down the row?"

Since most of the state's corn is produced under furrow, the answer is important. Miller will spend the next three years investigating. Working with him is Craig Alford, a plant sciences research assistant who is pursuing a doctoral degree in connection with the project.

Miller estimates that 100,000 acres of irrigated corn are harvested in Wyoming, with half of it earmarked for silage and the other half split between feed and food. About 15,000 acres of corn are being grown in extended dryland rotations that generally produce three crops every four years, he says.

"Sugar beets are even more promising than corn in 15-inch rows," reports Miller, who is also researching fallow irrigation in that crop. Since farmers who

grow sugar beets generally raise corn and typically dry beans, he says it is in their best interests to reconfigure their acreage for more efficient use of their farm machinery.

To get the word out about his findings to producers, Miller writes for extension publications and research and extension center reports. He also makes presentations during field days, which are usually attended by growers as well as crop advisers and support people representing the agriculture industry. "We have been doing some of the work right in farmers' fields," Miller says.

The professor works on 80 to 90 plant projects each year. "They don't happen without the cooperation and help of the people at the research centers," he adds.

Grapes in Wyoming: If they're planted,

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

Roger Hybner can be downright ornery when someone tells him he can't do something.

Take growing grapes in Sheridan, for instance. "Somebody told me I couldn't raise them here," he recalls in a cantankerous tone.

That was in 1987. Sixteen years later, he has tested more than 50 grape varieties at the College of Agriculture's Sheridan Research and Extension Center, where he is the director,

and at Sheridan College, where he conducts research and teaches classes.

Hybner is currently making plans to test more than a dozen new varieties and to triple the size of his plots. Meanwhile, he offers annual workshops in fall pruning and burial for other Wyoming grape enthusiasts and works with universities in Minnesota, New York, and Nebraska to keep up with the latest techniques for grape production in cold climates.

Utilizing his good-natured side, Hybner has been able to convince folks in the Sheridan, Torrington, Basin, and Riverton areas and in almost every county in the state that with a bit of inge-

nuity, grape growing can provide a tasty means of diversification for producers.

He has the jelly and red wine to prove it. So what if the growing

season in Wyoming is too short? Accommodations can be made to create "micro climates" sheltering vines from the wind and helping them draw heat from nearby structures. Hybner has an answer for every naysayer, but he admits that creating successful vineyards in the state can be a challenge.

At his workshops he shares insights on production practices, variety selection, proper pruning techniques, and over-winter care.

"One of the reasons to prune is to ensure a crop every year," Hybner explains. "The plant will take off vegetatively but not give fruit if you don't prune." He says grapes are hardy plants that can handle a lot of abuse. "I always tell people to think of what makes them mad and then go prune their grape vines," he quips.

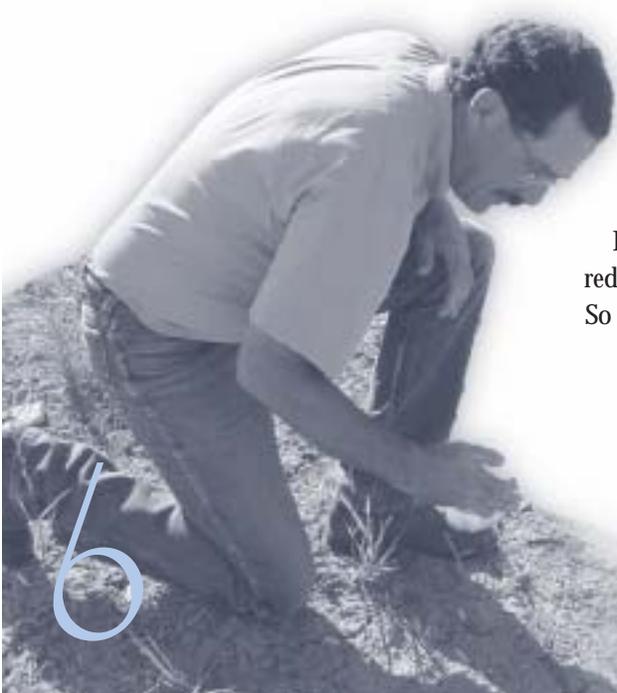
After fall pruning in northern Wyoming, the vines need to be taken off their trellises, laid down, and staked to the ground.

If they are covered with about a foot of straw and enough dirt to keep the straw from blowing away, Hybner says, they will likely survive the winter. "It also shelters them from our last frost and from growing too early in the spring."

As with tomato plants, early growth in grapes must be protected because the first leaf is followed immediately by the fruit cluster. "The vine can re-grow, but you won't get any fruit from it," he explains.

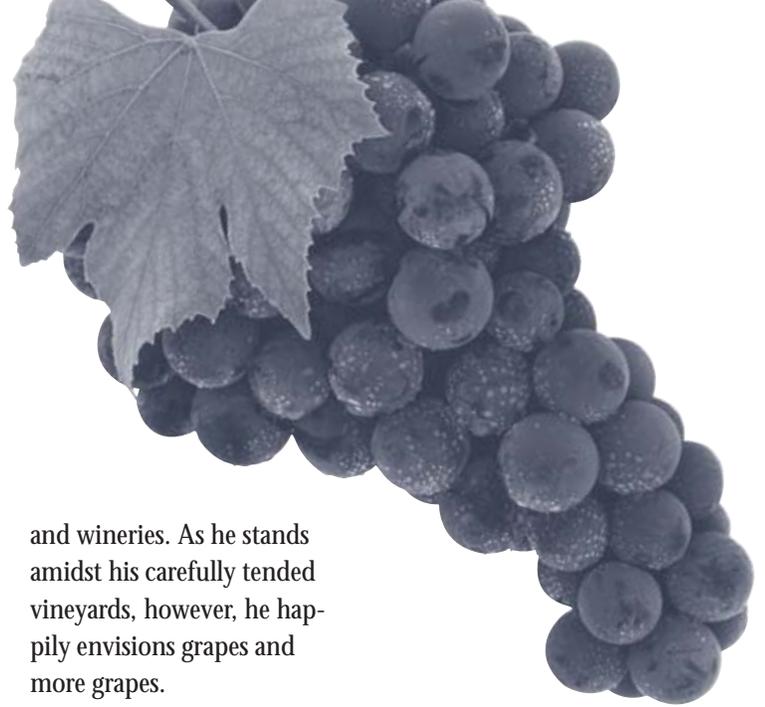
Depending on the age of the plants and on production practices, each vine that is at least four years old can produce from 7 to 20 pounds of grapes, Hybner says. Table varieties he has grown include Valiant, Warden, Himrod, and Swenson Red. He has produced such wine varieties as Foch, St. Pepin, La Crosse, and Kay Gray.

His vineyard, which is protected from animals by an electric fence, has also been a next-door neighbor to 50 different fruit trees.



Roger Hybner examines new grape plants in July at one of his research plots at Sheridan College.

they will grow



The grapes and fruits grown at the center and at the community college are sold at farmers' markets and given to people in the area who make juice and jelly. He has also passed along part of his crop to Sheridan's Wyoming Crafts and Wine Cellar, currently the only winery in the state, to be turned into everything from pear wine to red wine for University of Wyoming hospitality events.

Owned by Fred and Deena John, the winery sold 6,400 bottles last year and had already tripled that amount in October. Most of their grapes come from western coastal states and Canada, but the Johns also use the crops of Sheridan area residents who have been producing for 40 years for Christmas wines. Like Hybner, they would like to see grapes grown in enough quantity in Wyoming so that not as much grape crush has to be imported.

For those interested in helping Hybner continue

to prove that producing grapes is a can-do proposition in the state, he recommends visiting the Web site www.mngrapes.com for information from the Minnesota Grape Growers Association. Like Wyoming, Minnesota has long winters and requires grapes bred with cold hardiness. Unlike Minnesota, Wyoming is generally free from humidity and thus free from many types of plant diseases characteristic of the Midwest. "Most any variety that will grow there will grow here or in southeast Wyoming," he notes.

The University of Nebraska Viticulture Program publishes a monthly newsletter about its research and conducts annual growers' association meetings. Those wanting more information can also contact Hybner at wyrno@uwyo.edu or (307) 737-2415.

Hybner gets a bit grouchy when talking about what he describes as Wyoming's "antiquated wine laws" that seem to favor out-of-state marketers

and wineries. As he stands amidst his carefully tended vineyards, however, he happily envisions grapes and more grapes.

"I think grapes definitely grow in the state with positive results," Hybner says. "Once we get the vineyards going, there's a market for any grapes produced."



UW agroecology student Sara Sauer tends some of the grape vines at the Sheridan Research and Extension Center during her summer internship there.



Creations on display at the quilt show are works of art that tell personal stories.

Quilting in the Tetons connects

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

They came from the four corners and the heart of the nation armed with state-of-the-art machines, stand-up lights, calculators, huge plastic bins, cutters and cutting boards, rolling briefcases, large-handled bags, irons and ironing boards, round-headed pins, scissors, needles of all sizes, butcher paper, magnifying glasses, glossy books, fabrics of varied hues and designs, glitzy beads, colorful threads, measuring boards, and the astonished eyes of crafters about to be treated to an amazing journey.

Banding words like appliqué, kaleidoscope, drafting, sampler, nine patch, wearable art, circles, trip around the world, basket blocks, spiral lone stars, embellishment, sharing scraps, and border jazz, they culled together generations of treasured experience at an artistic endeavor that seems

to extend its magic web daily to more people throughout the world.

“All it takes is your first finished one and you are hooked,” they promise.

Next year they’re going to add “chocolate” to the supply list. Why? “It’s one of the basic food groups for quilters,” they confide.

These folks aren’t just quilting – they’re “Quilting in the Tetons.”

For 17 years quilt lovers have been trekking with their cherished paraphernalia to Jackson Hole each fall to learn the latest in creative techniques from internationally recognized and published instructors.

Sponsored by the Teton County University of Wyoming Cooperative Extension Service under the leadership of educator Mary Martin, the event offers 33 classes over a six-day period plus a

display of international quilts ranging in price from \$300 to almost \$10,000.

Grandma’s square-pieced quilts and their sentimental loveliness aside, a new quilting craze is storming the 21st century, and its cadre of devotees is elevating the historic art to a no-holds-barred revolution of design.

“This is a wonderful program. The quality of the instructors is amazing. The fact that we’re also in a beautiful setting just adds icing to the experience,” enthuses Gail Chouinard, a faithful “Quilting in the Tetons” attendee from Ellensburg, Washington.

Devona Davis of Idaho Falls, Idaho, first learned to quilt from her mother and has continued pursuing her own passion for 50 years.

“I have 27 grandchildren,” she says. “I made a



It can be painstaking, detailed work, but Gail Chouinard of Ellensburg, Washington, enjoys learning new quilting techniques.

quilt for the first one for his wedding. I have a second one finished specifically for a grandson who is a cowboy. I have 25 to go.” Davis says her husband doesn’t understand why she won’t just sew 27 duplicate quilts. Instead she is carefully planning colors, designs, and embellishments indicative of each grandchild’s characteristics and interests. “It’s truly a labor of love,” Davis says with a smile.

She and her husband have traveled extensively during their marriage. With pieces of native fabric gathered at each destination, Davis is also creating what is known as a “Trip Around



Carole Liebrezeit, center, shows students the colorful design pattern on a quilt crafted by CES educator Mary Martin.

historic art with modern ideas

the World” quilt.

Marilyn Bettker of Gardnerville, Nevada, who is celebrating her silver anniversary as a quilter, says it’s a wonderful hobby that offers opportunities to visit new cities to learn more about quilting. “You can take the same class over and over again and learn something new every time,” she shares. “Besides, I’ve never met a quilter I didn’t like.” Hometown quilters often get together to compare ideas and to make quilts for charities.

Elly Sienkiewicz of Washington, D.C., an international expert on Baltimore Album Quilts and the recent recipient of the prestigious “Silver Star” award for her lifetime contributions to the field, has “groupies.”

Susan Kirth of Oklahoma City, Oklahoma, follows her to various quilting shows to learn more about appliqué. “This will be one of the most pleasant days you will ever have,” she tells Sally Wright of Missoula, Montana, who has waited for years to quilt with Sienkiewicz.

“Applique,” Sienkiewicz assures her students, “is a bit like driving a car. You get

better and better at it.” She doesn’t believe in attaching too many rules to quilting. “We don’t want to lose the poetry of it,” she whispers.

Doris Jelaco of Rock Springs says she would be content taking classes from Sienkiewicz for the rest of her life.

Carole Liezeit’s fan club relishes bright colors and rainbow progressions interacting with the “zip and jazz” of buttons, beads, and embroidery threads. A Jackson resident by way of Ohio and several foreign countries, Liezeit favors contemporary designs and wearable art reflective of ethnic textiles and cultures. She has taught and judged internationally for more than 15 years.

Dotting her lessons with expressions like “Let’s get funky,” “You get a lot of jazz out of patterns over solids,” “Isn’t that zingy,” and “This is sort of like a Zen experience,” Liezeit guides her charges out of their quilting boxes and into creations that light up rooms with their pizzazz.

Ann Blaney of Moose had always worked with traditional colors. “Once I started purchasing some

bright fabrics and started cutting them up, I really became more excited about this technique,” she says. “This is an awesome way for us to develop some creativity and spark.”

Liezeit tells a story about her son. She made him a quilt when he went to college using the school’s colors. Although he crumpled it up to sleep under it every night, he folded the quilt neatly each day and refused to let his buddies even touch it. “The most important ingredient in every quilt is emotion,” she says.

Mary Martin loves watching “Quilting in the Tetons” unfold each year. She is interested in the his-

tory of the art, picturing women riding in covered wagons stitching along the Oregon Trail and slaves using the scraps of their masters to send hand-crafted messages along the underground railroad. Groups of women in revolutionary times etched political statements into their quilts. She ties the resurgence of interest in the craft to the bicentennial celebrations of 1976.

A quilter herself, Martin quietly reveals the secrets of the quilts hanging on display and gently touches their jewels, reversed images, and cultural calling cards.

“A quilt show is like a very private art show,” she says. “If people weren’t willing to share, we would never see these creations.” Although prize money is awarded to some of the artists, it would seem that just the opportunity to be part of such a personal anthology would be reward enough.

Martin thinks of quilting as an expression of self-worth. “People who make quilts are giving a gift of themselves to someone else,” she says. “These quilts will be treasures in future years. They will tell the story of the 21st century.”



Elly Sienkiewicz displays one of the appliqué designs she is famous for.

Advisory board links with college

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

The College of Agriculture and its advisory board have a win-win relationship. The board members visit the campus to learn about program developments in each department and to offer suggestions and support. The departments in turn use the board's feedback and advocacy to further the mission of the college.

Be it the need for funding for a new chair or ideas for the expansion of options available to students, "There are lots of things that all of us can help with," says board member John Clay of Cheyenne.

Together the board and the college can "grab the proactive reins" required to meet the challenges of the future, says Tom Thurow, professor and head of the Department of Renewable Resources.

The 33 volunteer board members represent Wyoming ranchers, farmers, and citizens as well as organizations such as Mountain



Advisory board member John Clay of Cheyenne, center, encourages the group to help secure funding for College of Agriculture programs.

West Farm Bureau, the Institute of Environment and Natural Resources, the Wyoming Hay Producers, the Wyoming Business Council, the Center for Applied Research in Educational Technology, the Natural Resources Conservation Service, the Wyoming Agricultural Leadership Council, the Wyoming County Commissioners' Association, the Wyoming Department of Agriculture, the Wyoming Crop Improvement Association, the Platte County National Bank, the Wyoming Livestock Board, the Wyoming Stock Growers, the Wyo-

ming Rural Development Council, the Wyoming Wool Growers, and the *Wyoming Livestock Roundup*.

Cheyenne members include John Clay, Joseph Evans, John Etchepare, Dr. Taylor Haynes, Floyd Humphrey, Jim Logan, Jim Magagna, John Morris, Doug Samuelson, and Don Simpson. Casper representatives include William Bunce, Michael Burke, Lincoln Burton, Bob Kidd, Bryce Reece, and Del Tinsley.

Marvin Applequist and Harold Bergman of Laramie are board members along with Dan Brown of

Riverton, Bob Budd of Lander, Jerry Dilts of Gillette, Stan Flitner of Greybull, Mike Forman and Lloyd Snider of Powell, Keith Geis and Ray Hunkins of Wheatland, Carol Hamilton and Ron Micheli of Ft. Bridger, Lois Herbst of Shoshoni, Ken Macy of Pine Bluffs, Brad Mead of Jackson, Tim Pexton of Douglas, and Patti Sellenrick of Sheridan.

At its fall gathering, the advisory board heard reports about resources, department news, and the college's proposed academic plan.

Anne Leonard, director of development and college

to promote programs

relations, told members about private gifts being sought to create endowed faculty positions or chairs in wildlife and livestock diseases, water quality and watershed ecology, and molecular and medical biologies.

It was pointed out that financial endowments help establish research staffs and projects but that the addition of grant dollars generally assures that a chair pays for itself and offers indirect returns through discoveries and publications.

Leonard explained that the college also hopes to expand its horticulture program and its “Beyond the Classroom” initiative, which is aimed at expanding student education outside the walls of the university. Gifts are also needed to support undergraduate scholarships and graduate student fellowships.

Professor Merl Raisbeck of the Department of Veterinary Sciences reported to the board about research underway in the fight against chronic wasting disease, West Nile virus, bovine viral diarrhea virus, and rabies as well as actions taken

at the Wyoming State Veterinary Laboratory to comply with required homeland security measures.

Board member Jim Logan, the state veterinarian, offered praise for the department’s efforts. “There’s no way to express the importance of the Wyoming State Veterinary Laboratory to the people of Wyoming,” he noted. “The lab does an excellent job and is extremely valuable.”

Department of Family and Consumer Sciences Head Karen Williams shared news about an enrollment boom and recent student and faculty accomplishments with the board and also outlined plans for a new Early Care and Education Center which will combine the expertise of several colleges and departments in research focusing on early childhood development.

In his report from the Department of Agricultural and Applied Economics, Professor Ed Bradley said his unit is “trying to work smarter” to cope with a slight enrollment drop. He explained that there are opportunities for students to work on issues critical to the

region in the areas of agricultural profitability, economic and small business community development, open space and land management, natural resource policies, and economically sound decision making.

Bradley described cooperative efforts underway

with the College of Business and IENR and praised grant-funded research into greenhouse gases and the economic effects of Preble’s mouse critical habitat designation.

The molecular biology department report from
(Continued on Page 12)



Jerry Johnson, standing, professor and chair of the Department of Molecular Biology, gives the board a pop quiz in plant identification during its fall meeting.



Jim Logan, leaning, praises the work of the WSVL. Logan is an advisory board member and the state veterinarian.

Professor Jerry Johnson highlighted \$6.1 million in new grant dollars in 2003. Professor Doug Hixon of the Department of Animal Science offered a review of student awards, livestock performance tests, and research into the use of nonfat dry milk for feeding.

Thurrow talked about a 6.5 percent enrollment increase in his department as well as projects aimed at using insects to biologically control invasive weeds.

Professor Dave Koch of the plant sciences department brought up the success of a study relating to the control of nematodes that was one of 10 projects out of 1,600 recognized nationally. A new agroecologist is slated to be hired, and the department hopes to double enrollment in the next five years, Koch said.

Despite UW's small numbers when compared with agriculture colleges nationwide, more than 90 percent of

Wyoming's agriculture graduates find jobs, reported Jim Wangberg, associate dean and director of academic and student programs. "We're bucking a demographic trend," he noted.

Glen Whipple, associate dean and director of the Cooperative Extension Service, updated the board about the progress of the state's five outreach education initiative teams, and Jim Jacobs, associate dean and director of the Agricultural Experiment Station, outlined plans for the new Sustainable Agriculture Research and Extension Center near Lingle, which will replace current centers in Archer and Torrington.

At the advisory board's spring meeting, members will have the opportunity to share their comments and concerns about changes in the agriculture industry and new research directions the college may want to pursue.

UW studies

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

Is malnutrition more prevalent in Iranian school children from nomadic villages than in those from permanent settlements?

This research topic is being explored by Dena Goldberg, an assistant professor in the Department of Family and Consumer Sciences. "I'm not aware of any other studies in Iran that have looked at this age group in terms of nutrition," she notes.

Preliminary results based on height and weight measurements, blood tests, and disease screening show that both the nomadic and settled youngsters are experiencing a high prevalence of poor growth and iron status, perhaps indicating that daily lifestyle as opposed to transience is an indicator of the children's development.

The project came about when Goldberg teamed with a former colleague at Jackson State University in Mississippi to study nutrition issues in

in Iran point to malnutrition in rural children

children in a nomadic Qashqa'i village who recently moved into a more modern community and in a Persian village which has been occupied for more than 100 years. Although only five miles apart, the two settlements near Shiraz in southern Iran have dissimilar subcultures and different languages.

Mohammad Shahbazi, her collaborator, grew up with the Qashqa'i tribe, and many of its current members bear his same last name.

Goldberg says the "modern" town recently given by the government to the Qashqa'i people lacks indoor plumbing and has only one telephone. There are no stores. "It's still subsistence living," she reports. Villagers rely on the animals they raise and the plants they grow for their diet, with seasonal variations affecting the quantity and quality of their food.

With the help of global perspective and international travel grants, the College of Agriculture faculty member first visited Iran in 2001, collecting birthdates, heights, and weights from children in

both areas and screening them for conditions like anemia and hepatitis. A medical university in Shiraz assisted with analysis of the blood work.

"We found a very high prevalence of anemia in the children of both villages," Goldberg says. "They were also short for their age and underweight." She speculates that the anemia could be caused by the fact that the large quantity of tea they consume might be interfering with their absorption of iron. There were indications that the nutritional intake of the youngsters was not optimal.



Assistant Professor Dena Goldberg, second from right, is researching the nutritional health of school children like these in two Iranian villages.

Children tested in the Qashqa'i community ranged in age from 8 to 14 and numbered 19 males and 20 females. The study group in the Persian village ranged in age from 7.5 to 15.5 years and was 55 percent male.

Although supplemental iron was given to the anemic children to help improve their health, questions remain about how treatment can be continued in the future should the condition persist and what is causing the poor growth and anemia. The villages are now experiencing an outbreak of hepatitis.

Goldberg and Shahbazi plan to continue their research by using their baseline data to continue monitoring the development of the children with the goal of creating health records and making recommendations to the appropriate government authorities in Iran.

They presented an abstract at a meeting of the American Public Health Association a year ago and will discuss additional information on the project at the 2003 gathering of the group. The two are also planning to write about the research for publication.

Goldberg says she is seeking funds to return to Iran once the political situation in the area is less volatile. She is anxious to continuing helping villagers find ways to improve the nutritional and health aspects of their lifestyles.

"I was very well received. The people were excited to be visited by an American," Goldberg recalls. "I was able to talk to the children's parents about what their children eat. Nobody had ever asked them those kinds of questions before."

Recruiting dynamo helps college

by Vicki Hamende,
Senior Editor

*Office of Communications
and Technology*

She's a petite bundle of energy with "Think Big" as her cheerful calling card. It's surely no coincidence that with a name like "Pepper Jo" she spits out enthusiasm spiced with sincerity, savvy, and an infectious smile.

Who better to be on the front line recruiting students for the College of Agriculture than Pepper Jo Six?

"When you think ag, think big," she repeats, perhaps even in her sleep. If Pepper Jo has her way, young people will flock to the University of Wyoming and the college to explore the variety of career programs just waiting for them.

"I think that when students consider UW they may not be aware of all of the opportunities available here," Six says. She aims to change that. The college's first official traveling recruiter, she has been on the job just over a year, but her ebullient personality and oozing friendliness are helping many young people realize that the College of Agriculture is an exciting place

to be. The fact that fall enrollment figures have grown is at least partly a testimonial to Six's efforts.

Catch her if you can! Six visits all of the state's community colleges, e-mailing each faculty member ahead of time to request 15 minutes of class time for a fun, interactive presentation that uses hands-on games to stress the broad nature of agriculture.

"When they hear ag they sometimes picture only cows and plows," she notes. Just naming for them classes in the college that don't begin with the words "agriculture" or "animal" usually raises a few eyebrows. When they hear about the variety of degree programs, they truly begin to "think big."

Six also staffs a booth in a well-traveled area during each community college visit so that she can talk individually to students and offer them more information to match their interests.

"By the time I get back to my office, two to five students have already e-mailed me with questions," she says. "I think the community college visits have been a great success." It undoubtedly helps that Six e-mails

"I take enrollment personally. I only want positive outcomes from the things I do. I have a great college on my side, and I know eventually the numbers will catch up with that."

all prospective students ahead of time so that they will anticipate her arrival.

She also visits high schools in the state to spread her message, coordinating with guidance counselors to display advertising posters and to promote the college's extensive undergraduate scholarship program. Six also seeks out teachers in agriculture-related fields and leaves them handwritten notes encouraging them to invite guest lecturers to explain the research opportunities available at UW. "I tailor each note to each teacher," she explains.

Six also works with the UW Visitor's Center to arrange tours for all prospective students. "I meet per-

sonally with each one and also arrange for an ag ambassador in their area of interest to give them a student's perspective on UW and what the dorms, computer labs, and tutoring services are like," she says. In addition, she arranges for each potential student to spend time with a faculty member, often viewing department facilities and witnessing programs in action.

"I have no true data, but informally I think that each student we can visit with almost always comes here," Six says. "If I can get them to campus, it's really beneficial. The parents feel connected if they can meet with me and with a faculty member. They see that it is a true, caring, small environment that is setting students up for success, and I think that's a key in recruiting." After students leave her office, Six sends them personal notes with little gifts. An ag ambassador follows up two weeks later with an e-mail.

Six also spends time sending viewbooks and information to prospective students throughout Wyoming and in surrounding states and is in the process of developing a series of in-

advertise its strengths

teractive e-mails that will pitch different subject areas and allow readers to learn more about careers they can pursue with a degree from the college.

"I am always open to new suggestions and creative ideas," she adds.

Six seems to generate plenty of her own. With her appealing aplomb she makes sure that the college's Web pages are up to date and engaging. She fashions rotating displays in the Wyoming Union that promote different college degree programs. She is hoping to do the same in the Arena Auditorium.

Personal letters to top high school students from Six inform them about the college's "dynamite" scholarships and promote its free tutoring services. "I am proactive at campus resource fairs, handing out pens and pencils and telling people about our faculty and our research opportunities," Six says. "I at least walk away knowing one student will contact me."

She or an ag ambassador can be found at UW campus recruiting events, FFA conventions, the 4-H Youth Leadership Confer-

ence, the Cowboy Youth Classic livestock event, the state fair, judging clinics, the Western 4-H Roundup, state science fairs, Farm and Ranch Day, the Athlete Majors Fair, principals' conferences, the Albany County Ag Expo, the Northwest Colorado Livestock Expo, the Wyoming Hunting and Fishing Expo, and the Animal Science Field Day.

She meets individually with department heads to discuss her role, learn more about their programs, and enlist their help. She thinks of things like targeting pre-pharmacy students not eligible yet for pharmacy scholarships to draw them into the college's microbiology and molecular biology departments where they can have access to College of Agriculture scholarships. If an interested student can only visit campus on the weekend, Six is there.

In her zest to better connect prospective students with the faculty and the college, Six is pursuing more personalized follow-up. "We want them to be aware of our cutting-edge research," she explains. To accomplish that she sends articles from the college's

publications. "I highlight things, attach sticky notes, and write personal comments. Students know form letters and sometimes don't read them. A special message is different."

Does she sleep? "I often wake up in the middle of the night," Six confesses. "I have paper by my bed because I'm constantly thinking about something new and innovative that we can work on."

To meet Pepper Jo Six is to witness firsthand the power of people skills and to appreciate the fun of being with someone who exudes optimism. It is no surprise that she is a past winner of the coveted James C. Hurst "Each Student a Person" award.

"Our college sells itself when it comes down to it. That's why I can do this job," she says. "I truly believe that we offer excellent research opportunities for undergraduates. I am really proud of my college, and that's what makes my job easy," she adds.

"I take enrollment personally. I only want positive outcomes from the things I do. I have a great college on my side, and I know eventually the numbers will catch up with that."

Pepper Jo Six provides a positive message for students interested in a College of Agriculture degree.



Researchers hope to help increase

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

Two College of Agriculture researchers want to help Wyoming's wool growers survive in an increasingly competitive international market.

To do so they are utilizing a modern instrument called a reflectance colorimeter that objectively measures the whiteness of wool. The whiter the wool the better it will dye and perform.

The next step for associate professors Bruce Cameron of the Department of Family and Consumer Sciences and Bob Stobart of the Department of Animal Science is to use the state-of-the-art equipment and other types of research to help producers get the yellow out of their wool and thus increase their profits.

The two have been studying wool together the past 16 years, with Cameron focusing on textile issues and Stobart on production. Specifically, Cameron's area of expertise is wool science and technology, and Stobart's know-how is in the

area of the biology of wool growth and genetic improvements in wool traits.

In their most recent joint research publication, they conclude that after scouring (cleaning) and carding (further cleaning and straightening of fibers), U.S. wools they looked at had a much wider range of yellowness indexes compared to those of wools from Australia and New Zealand, the two largest exporters of the product.

What this means is that the U.S. wools they tested may not pick up the dyes of today's trendy colors as well

as those of other wools, thus reducing their market values.

"Color is becoming more and more important purely from the fashion standpoint," explains Stobart. "The traditional dark blues and grays are now pastel colors." The natural color of the wool, he says, can have an impact on the hues of lighter shades.

"Wool is never true white, but the idea is to get it as close to white as possible," says Cameron. While other countries have spent hundreds of years practicing selective breeding programs to refine fiber color, the

United States is still catching up.

"With the decline of the processing industry in the U.S., sheep producers have had to look to other markets overseas," Stobart says. "They need to compete with companies that have been exporting wool for a long time." American producers, he says, have to pay more attention to the quality of the fibers and their physical parameters as well as their color.

He also points out that whereas wool has traditionally been the main product of the sheep industry in Australia and New Zealand, lamb has been more profitable in the U.S. Wyoming currently ranks third behind Texas and California in total sheep numbers and is second in wool production. The Wyoming Wool Growers is the oldest producer organization in the state. "The total number of dollars the industry brings in is small, though, compared to cattle production," Stobart says.

One way for wool growers to increase profits is to prepare their product as much as possible before it is ever sent to processing com-



Bob Stobart, right, positions a piece of wool in the new reflectance colorimeter while Bruce Cameron explains the color readings produced by the instrument. The two will use the device, which is housed in the Department of Family and Consumer Sciences, to continue their joint research.

state's wool profits



panies. "An opportunity exists for ranchers to skirt and grade wool either at shearing or pay a marketing organization to do the job for them," Cameron and Stobart note in their latest article. "Theoretically, when it is no longer necessary for a textile mill to perform these tasks, labor savings can be passed back to the grower on return for prepared wools."

Stobart says producers can work harder to make sure that external vegetable matter and straw are kept off of sheep before they are sheared and that the animals are kept dry. Shearing areas and floors need to be kept clean, and the less desirable parts of fleece should be kept separate from the desirable parts. It is important to have someone on hand who can sort wools into different categories according to their value. Another key, he says, is to place the wool in square nylon packs as opposed to the "sausage tubes" and burlap bags of the past that can contaminate the product.

The two researchers bemoan the fact that the use

of wool, which they contend has been a key commodity in the development of the new world, has been eclipsed by cotton and what Stobart describes as the "wash-and-wear mentality" of a country turning to synthetic fibers. The wool suits that were formerly the standard for businesspersons have been replaced in some cases by more casual wear. Sports clothing is more of a norm than Pendleton shirts.

Perhaps consumers need to be reminded that wool is a fabric for all seasons, the researchers suggest. Lightweight summer wools absorb and release moisture, providing a cooling mechanism for their wearers. Thicker winter wools capture body heat and provide warmth by acting as thermal insulators.

Cameron, who is a native of Australia, remembers having wool carpets in all of the places he lived there. "We had and knew and used the commodity," he says. "The attitudes there are different."

Cameron and Stobart's work in trying to help Wyoming producers plunge into

what can still be a lucrative international market for them is already being aided by the reflectance colorimeter they were able to purchase with grant funds supplemented by contributions from their departments.

The previous instrument they used was "like a Model T," Stobart says. They can now measure wool color in a variety of ways, and they have the software needed to save and analyze data. They can also accumulate objective measurements and put them into a formula so that manufacturers can predict how well a particular fiber will perform.

Since wool sales provide just 10 to 12 percent of producers' incomes in Wyoming, Cameron and Stobart say it is difficult to secure the kind of research dollars funneled to other agricultural interests. Texas A&M University is the only other land-grant university involved in ongoing projects like theirs.

In the future they hope to continue to evaluate wool in terms of its yellowing propensity by putting it into

high-humidity environments. They also want to study the effects of the long-term storage of wool on its color.

Cameron and Stobart believe it is important to people who rely on selling wool for part of their livelihood that such research continues. "If wool is going to be produced here to compete with wools from other countries, we have to learn to prepare it and evaluate it better," Cameron says.

"We have an obligation to help producers as much as possible to stay competitive and to try to help them keep and increase their market share," Stobart adds. "The bottom line is to keep them in business." He points out that although minerals and tourism are the top income generators in the state, those industries do not affect many of the counties in Wyoming.

"Agriculture has an impact in every single county," he notes. "Wyoming is rural and always will be. We want to keep the economy going for sheep producers so that they can make some money and so that they can stay."

Graduate student growing native plant

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

Myrna Ulmer never imagined herself hanging out in yellow fields of prairie coneflower. She certainly never thought she would be writing a thesis about the native forbs and researching them for four years.

Actually, she wasn't even sure she wanted to attend graduate school. With a bachelor's degree in forestry and a full-time job with the U.S. Forest Service, what more did she need, plant wise?

Then the seed of an interesting project just sort of planted itself at her feet. Now Ulmer is an outreach student in the College of

Agriculture pursuing a master's degree in agronomy and producing seeds that will be used to revegetate disturbed soils.

"I'm having a lot of fun," she reports.

A native of Lander who lives in Powell, Ulmer is working on a project funded by Warren Air Force Base in Cheyenne to evaluate about 20 native forb species to see if they can "outcompete" the weeds and reclaim areas thinned by development. "It's a better long-term fix than just spraying the weeds all the time," she explains.

With seeds from the plants, which include such species as dotted blazing star, scarlet globemallow, shy wallflower, and rough pricklepopy, Ulmer has been conducting dormancy-breaking trials at the Bridger Plant Material Center in Bridger, Montana. Her goal is to determine optimal germination conditions and to produce seed for eventual planting at Warren. The species that have exhibited successful seed growth so far are being planted at Bridger as well as with the Wind River Seed Company in

Manderson to increase their production.

To narrow the research to a particular project for Ulmer to use as the basis for her graduate thesis, she picked a species with little or no dormancy that lends itself well to becoming an agricultural crop for seed production.

Thus began her relationship with *Ratibida columnifera*, the colorful prairie coneflower. It is often used for restoration purposes and by people who desire a native landscape. There has been some research done in the past on the genus but not on the specific species.

"What I am studying is how individual plant spacing affects seed production," Ulmer says. She is experimenting with 6-inch, 12-inch, and 24-inch spacing to measure variations in seed-head height, information that is important to know when determining what kind of harvesting equipment is needed.

The first crop of seeds and plants was collected in the fall and is now being measured for production,



UW graduate student Myrna Ulmer checks soil moisture in her prairie coneflower plot at the Powell Research and Extension Center.

seeds for reclamation project

viability, biomass and other characteristics. Ulmer will collect more data in the fall of 2004 and hopes to finish her thesis in the spring of 2005.

To provide variation and produce more practical statistics, Ulmer is tending prairie coneflower plots at both Bridger and the Powell Research and Extension Center, where she is conducting research under the guidance of University of Wyoming Professor and Center Director Alan Gray, Soil Fertility Specialist Bart Stevens, and retired UW Cooperative Extension Service Weed Specialist Tom Whitson, who first proposed the project to officials at Warren Air Force Base and brought Ulmer on board.

Supervising her in Bridger are researcher Joe Scianna and Mark Majerus, director of the Bridger facility, who is growing his own field of prairie coneflower for eventual foundation seed release.

So far Ulmer has been able to produce more seed heads in Powell and is speculating that it may have something to do with soil



Joe Scianna is guiding Ulmer in her work with native forbs at the Bridger Plant Material Center in Bridger, Montana.

fertility. Residual nitrogen from a former alfalfa crop is likely benefiting the Powell plot.

Although prairie coneflower has become her favorite, Ulmer is still enjoying her research on all of the native forbs from the air force base. The restoration of disturbed sites, she says, is a big industry, illustrated in Wyoming through reclamation projects at coal mines, along highways, in wildlife habitat improve-

ment areas, in conjunction with projects relating to energy development, and in connection with numerous conservation programs.

“Man has to provide mitigation with some kind of input – either herbicides or replanting,” Ulmer explains. Her bias, of course, is to produce indigenous seeds which are already better adapted to grow in areas where they currently exist.

“I’m so glad that I’m working with wild flowers. I never imagined that this great native seed project right up my alley would just open itself to me,” Ulmer says.

“I love to grow things, so this has been a great deal of fun. It has opened up a whole new world of opportunities. I was so forestry-oriented that I didn’t even realize this other world existed.”



Australian connections

by Vicki Hamende,
Senior Editor

*Office of Communications
and Technology*

Although it is thousands of miles, an ocean or two, and a hemisphere away, Australia has a lure that attracts more and more College of Agriculture faculty members and specialists each year.

Whether it is to research crop practices, livestock issues, the economics of agriculture, the demands of rural living, ecosystems, or just to talk weeds and diseases, the idea of visiting down under has smitten people in all departments.

Faculty members Karen and Steve Williams hope to develop Australian connections that will lead to ongoing exchange programs involving students and faculty members at the University of Sunshine Coast (USC) in Skippy Downs, Queensland,

as well as with other institutions. They say they are drawn to the fact that USC is a new and progressive facility.

The head of the Department of Family and Consumer Sciences, Karen Williams spent several weeks on the southern continent during the summer, meeting for part of her visit with administrators, faculty members, and students at USC to explore the possibility of exchanges and joint research projects.

“One of their faculty members also came here to meet with our department to look at combining some projects on nutrition and dietetics,” Williams says. “I have an invitation to go back and teach qualitative research methods to faculty and staff there.” She adds that there is a USC student who may come to the Uni-

versity of Wyoming to work on a senior thesis in nutrition.

Williams also served as a visiting scholar at the University of Melbourne’s Centre for Equity and Innovation in Early Childhood during her trip. She learned how the facility is organized and funded and also toured a childcare center that operates within the university. “That was helpful since we’re in the process of designing and building a new one here,” she notes.

In addition, she met with doctoral students to discuss their research projects, participated in a workshop on qualitative research methodology, and conducted a seminar entitled “Parent and Teacher Perceptions of Play and Curriculum for 5-Year-Old Children: Insights from China and Mongolia.” Williams says she is interested in the “innovative” work in early literacy being conducted there. “They take a

stronger advocacy role than in the U.S.,” she adds.

Williams was also impressed with the multicultural nature of Australian life. “Being able to go into the museums and get the multiple perspectives on the aboriginal experience is really going to influence my teaching. That piece of visiting Australia was wonderful for me.”

Whether it is to research crop practices, livestock issues, the economics of agriculture, the demands of rural living, ecosystems, or just to talk weeds and diseases, the idea of visiting down under has smitten people in all departments.

multiplying throughout the college

Her husband Steve Williams, a professor in the Department of Renewable Resources, says Australia is a place he is excited about for several reasons. “It’s so different from Wyoming,” he notes. “The people speak roughly the same language, but the agriculture, forestry, geography, and topography are unlike ours.”

He recalls stepping into the bush to look at plants and not being able to recognize even one of them out of some 50 species. “I couldn’t recognize even the plant families except for the grasses. It’s a startling and humbling experience, and that’s the kind of thing that would be valuable for others to experience,” Williams says. “If we could get students to have similar experiences in both locations, their background preparation would be far enhanced over others graduating from North American and Australian schools.”

While the lifestyle and cost of education may be similar between the two nations, Williams says “there are exciting things about

Australia that we don’t have in our area and vice versa.” He points to Wyoming’s blizzards and to the fact that Laramie’s elevation is above that of some of the highest points in Australia. The southern continent boasts great white sharks, kangaroos, crocodiles, the world’s ten most poisonous snakes, and rainforests so thick that it is too dark even on a sunny day to take pictures.

Williams was impressed with Fraser Island, a huge sandy area characterized by tropical vegetation amid scoured dunes and where beaches serve as highways and landing strips for airplanes.

USC administrators, he says, are eager to establish contacts in the U.S. to learn more about its universities as well as the environment. “They are carving out their place in Australia and as an international facility,” Williams notes. “We are a larger and more established institution, but they came here and liked what they saw.” He is pursuing grants to help open the door to a



Karen and Steve Williams

broad exchange program.

“It would help our students and our faculty members, too, to see another part of the world to expand their vision,” he adds.

His wife agrees and says she will never forget the wild horses, dingoes, white-sand-bottomed rivers, and the bush fires at night that

are a natural part of the landscape. “Seeing these things expands your way of thinking,” she says. “It’s like getting out of your comfort zone and looking at things from a completely different perspective, a different paradigm. I will definitely go back.”



Canola plants which produce desirable cooking oils have taken off as a lucrative Australian crop in the last decade. Professor Jim Krall of the Torrington Research and Extension Center studied canola during an Australian trip and is now growing it in UW test plots. In the background is Sterling Mountain.

Visits to Australia help promote

**by Vicki Hamende,
Senior Editor**
*Office of Communications
and Technology*

It must be easy to get hooked on Australia. Hardly an academic year goes by without one or more College of Agriculture representatives attending conferences, conducting research, teaching programs, or networking with colleagues in the southern continent.

Gail Gordon, business development and family economics specialist in the Department of Agricultural and Applied Economics, traveled to Australia to make a presentation on rural family businesses at the 2003 International Beef Industry Conference in Rockhampton and also shared her expertise with the developers of a program geared to offering help to people in remote areas.

Traveling with her was

colleague Bill Taylor, a Weston County Cooperative Extension Service educator.

Making a presentation about the personal side of agriculture and online resources available to producers at the 14th International Farm Management Congress in Perth were Randy Weigel, human development specialist for the Department of Family and Consumer Sciences, and John Hewlett, farm and ranch management specialist for the agricultural and applied economics department.

Plant sciences faculty members such as Robin Groose, Fred Gray, Dave Koch, and Jim Krall have made their presence in Australia known in connection with a variety of research projects.

Other departments, CES, and the research and extension centers have been represented by Jim Jacobs,

Bob Stobart, Frank Henderson, Jack Cecil, and Jerry Nachtman. The list is much longer. To flip the coin, faculty members Bruce Cameron and Donna Brown of family and consumer sciences are among a group of UW faculty members who come from Australia.

Gordon says she and Taylor were treated like celebrities at Beef Australia 2003, an annual gathering attended by agriculturalists from throughout the world.

They connected with John Reeve, an extension officer with the Department of Primary Industry, and Canadian educator Lorne Owen to launch "Enterprising Rural Families," an online business course they developed along with other UW colleagues.

"The audience for the course in Australia would be the men and women who operate the stations in vari-

ous parts of the country," Gordon says. "We also had several important people who were consultants for Australian businesses talk to us about what we were presenting and express interest because they had never seen anything quite like it."

She said current students spoke about their experiences and what they had learned from the course.

"As a result of meeting with these people, we are making the program much more flexible to better meet the needs of rural families with businesses," Gordon says. For example, students will now be able to enroll whenever they want and will be given a longer period of time in which to complete the course. "The experience really did help us move ahead," she adds.

During the second prong of Gordon's trip, she spoke to coordinators of an Australian "Lifeline" pro-

college projects

gram that offers telephone help on issues like financial stress, suicide, alcoholism, abuse, and loneliness to residents of isolated areas lacking the infrastructure needed to provide face-to-face assistance.

“We were invited to talk about how we handle some of those issues here in our country,” she says. Gordon says she also spoke to the group about financial security in later life and shared program materials she has developed to help low-income people track their expenses. “They are very interested in working with me in the area of senior citizen abuse,” she adds.

Gordon and Taylor were interviewed for television and radio programs and also had several articles published about them during their trip.

Weigel, meanwhile, has made more than one visit to Australia in connection with agriculture management

online courses spearheaded by UW. “They have been involved in distance education much longer than we have,” he notes. “They have had radio schools in the bush and the outback going on for some time.”

He finds the similarities and contrasts between the Wyoming and Australian extension programs to be of particular interest. “There is much more privatization in Australia,” he explains. “People have to pay for services, and they have a different approach to marketing.” Weigel says he was surprised to learn that those in academia often have to seek funding for their own salaries.

Australian agriculture, he says, is dependent upon international markets because the population base is not large enough for just domestic use. Citizens there share Wyoming’s concern about drought issues but are much more attuned to suc-



Gail Gordon recalls her Australian experiences.

cession planning to transfer farm and ranch property from one generation to another.

Weigel sees the isolation in Australia as greater than that in Wyoming, particularly since the majority of the population lives along the coast. “They’re so far apart that online education is sometimes the only feasible way for them to learn. They can’t drive 125 kilo-

meters just to attend an agricultural program,” he says.

The CES specialist believes that his Australian counterparts are successfully meeting the challenge of the remoteness of their constituencies. “They have a great understanding of the human dimension of agriculture,” he adds.

College in position to be key player

by Vicki Hamende,
Senior Editor
*Office of Communications
and Technology*

The Wyoming Office of Homeland Security is counting on the University of Wyoming, specifically the College of Agriculture, to be a key player in preparing the state for large-scale animal and plant disease emergencies, whether they are caused by bioterrorism, human error, or Mother Nature.

During a “Keeping Wyoming Safe and Secure” conference in Casper in the fall, the office recommended that an educational program be developed at UW and community colleges focusing on agro-terrorism and the protection of human health through food and water supplies.

Although the U.S. agricultural industry is considered a “soft target” vulnerable to bioterrorism, the good news for Wyoming is that UW and collaborating

agencies are already working proactively to protect livestock and crops through prevention, early detection, rapid intervention, and the development of a far-reaching system for emergency preparedness.

In addition, the homeland security office reports that Wyoming is the first state in the nation to develop a timeline for a three-year exercise plan aimed at making sure that response teams have in place an “all-hazards” approach to test their vigilance.

Now what? Establishing funding, coordinating efforts, and plugging gaps appear to be next on the agenda. The conference, which featured national as well as state speakers, made it apparent that representatives of the College of Agriculture are at the forefront of the discussion.

“From an epidemiological point of view, the first requirement is that any cause for a disease outbreak be clearly identified,” says Professor Lee Belden of the Department of Veterinary Sciences, a speaker at the event. For animal health,

this is in large part a function of the Wyoming State Veterinary Laboratory (WSVL), he notes, but adds that test samples for identification need to be submitted in the first place in order to get a diagnosis.

“The second step in the process is to determine the magnitude of a problem,” Belden says. “What proportion of the animals in a given population are involved, how severe is the disease problem, how quickly are secondary infections occurring, are there simultaneous outbreaks occurring in different locations, and is the disease zoonotic” are questions he says must be answered.

“This means that veterinarians and animal owners need to be observant and recognize disease problems that might be new or different from what is normally seen,” he explains.

“The third step is to have a plan for a response to control an outbreak. A number of people and agencies should be involved in recommending the proper response including local, state, and federal veterinar-



Speaking at the “Keeping Wyoming Safe and Secure” conference, Professor Lee Belden of the Department of Veterinary Sciences explains the transmission and control of diseases.

in preventing agro-terrorism

ians,” Belden says. “This demands that there is interaction and trust between the WSVL, the state veterinarian’s office, the USDA’s Animal and Plant Health and Inspection Service, and people in the community.”

As director of the WSVL and head of the Department of Veterinary Sciences, Professor Donal O’Toole is in a unique position to make specific recommendations about what direct actions need to be taken to assure that UW and its partner agencies are prepared for any animal disease emergency.

Currently, he explains, the USDA area veterinarian in charge handles foreign animal and federally controlled diseases, the state veterinarian focuses on endemic disease outbreaks that are diagnosed at the WSVL, and the public health laboratory tests human samples including animal-human diseases such as monkey pox.

“There are a lot of gaps,” says O’Toole, who also spoke at the agro-terrorism conference. “It

would not be hard for a veterinarian in private practice to submit a rinderpest (bovine plague) sample to us with a vague history. We would lose one to three days in terms of realizing the need to quarantine the premises and halt animal movement,” he adds.

“In short, we need to have a state emergency plan spelling out who will do what and ideally do a tabletop, or better still, a real exercise testing how well things work,” O’Toole suggests.

He also recommends that more state laboratories like the WSVL be allowed to join the USDA-controlled National Animal Health Laboratory Network (NAHLN) so that they are in a position to test for foreign animal diseases like foot and mouth disease.

“We will need political support to do this since some in USDA regard the current 12 laboratories as ‘core’ laboratories,” O’Toole says. “Yet we know that the focus of state laboratories in NAHLN in the event of a multi-state disease outbreak will tend to be on their own

state’s samples. This was a problem for human West Nile virus testing when Wyoming depended on other states for confirmation. It will be worse for an animal disease outbreak, since the number of samples per day can be in the 10,000s.”

O’Toole supports an amendment to the Wyoming Livestock Board’s Rules and Regulations that would require the immediate formal reporting of any clinically suspected foreign or high-impact animal disease as well as any unusual high morbidity or high mortality event to State Veterinarian Jim Logan. “From a state standpoint, it is critical that his office hears of any odd outbreak, even before samples get to us,” O’Toole says.

The WSVL director says Wyoming needs a veterinary epidemiologist specializing in the transmission and control of diseases who knows the state, its organizations, and its culture and who is available to his lab or to Logan’s office. “We need someone who can give authoritative advice if we see a



major die-off and the state veterinarian has to make some tough decisions quickly, possibly including the quarantine and slaughter of herds,” he explains.

“We have a wonderful resource in the Wyoming Geographic Information Service Center. Those liaisons need to be made now between state government, veterinary and medical epidemiologists in the state, the state veterinary laboratory, and WyGIS or a similar resource,” O’Toole adds.

He would also like to secure a permanent funding source to help the WSVL replace aging equipment as well as acquire new, state-of-the-art laboratory instruments for regular and emergency diagnostic work. The professor says the state’s only
(Continued on Page 26)

veterinary diagnostic laboratory also needs to be in a position to definitively and officially diagnose the three high-impact diseases in animals - foot and mouth, anthrax, and bovine spongiform encephalopathy (also known as "mad cow" disease).

From a plant disease perspective, Professor Gary Franc notes that as much as \$33 billion can be lost in the U.S. in a given year due to reductions in crop yield, costs of control, trade disruptions, and human health effects caused by plant diseases. The deliberate or unintentional introduction of exotic crop pests can cost another \$100 billion per year in agricultural losses.

"Taking care of a plant pathogen introduction in a timely manner is a difficult task," he says, particularly since new pests are often first detected at the local level by those involved in crop production and not by regulatory agencies.

"There's a period of time between when a plant gets infected and when it shows evidence of disease. Meanwhile, the pathogen may have spread considerably. It's unlikely that a serious problem with our crops

would be immediately obvious as an attack against agriculture," Franc adds.

Also a speaker at the "Keeping Wyoming Safe and Secure" conference, Franc recommends the development and training of a first-detector network for recognizing plant diseases that would include Cooperative Extension Service educators, regulatory officials, crop consultants, pesticide applicators, commercial seed representatives, producers, master gardeners, and others involved in plant growth and crop production. The UW extension plant pathology laboratory would provide rapid diagnostic services as well as information on plant disease management and the identification of pests of major concern to this first-detector network.

An extension pathologist for the Department of Plant Sciences, Franc sees UW's role in emergency preparedness as being linked to its participation in the Web-based Great Plains Diagnostic Network, a consortium of nine regional land-grant universities that provides services for diagnosis and identification. The network, which falls under the umbrella of



Professor Gary Franc of the Department of Plant Sciences emphasizes the importance of a first-detector network in the diagnosis of emerging plant diseases.

the homeland security effort, is part of a greater National Plant Pest and Disease Diagnostic Network and its links with regulatory agencies.

With the college poised to be among the leaders in agriculture emergency preparedness in the state, O'Toole points to the common-sense remark

made by one of the other speakers at the bioterrorism conference: "It really will not matter if an outbreak is caused by human error, stupidity, or a malign act. The consequences will be the same."

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Ag and Applied Economics

Chris Bastian, an economics and marketing specialist with the Department of Agricultural and Applied Economics, discussed his research into the potential economic consequences of banning the use of snowmobiles in Yellowstone National Park on Wyoming Public Television's monthly UW magazine "Wyoming Signatures."

His studies also take into account the economic ramifications of capping or limiting snowmobile visitations and of restricting the type of machines allowed.

In addition, Bastian is developing an analysis for his doctoral dissertation that considers all of the other potential snowmobile sites in Wyoming, Idaho, and Montana that people might visit if Yellowstone trails were not available.

Professor David "Tex" Taylor has written *The Role of Agriculture in Maintaining Open Spaces in Wyoming*, a bulletin highlighting the way large agricul-

tural operations in the state contribute to preserving open spaces on private ranch and farm lands

The publication explains the value of open spaces as well as how the future of open spaces will depend to a large extent on what happens economically in the agricultural industry. It is available on the World Wide Web at www.uwyo.edu/ces/economic.htm and was developed in conjunction with the William D. Ruckelshaus Institute of Environment and Natural Resources, the Wyoming Natural Diversity Database, and the Wyoming Geographic Information Science Center.



Animal Science

The Wheel of Brands scholarship established by the Department of Animal Science in memory of former long-time UW Cooperative Extension Service Animal Scientist C.O. Schoonover is now an endowed fund. The scholarship was established with the support of his wife

Mayme Schoonover.

The first recipient is Mark Drumhiller of Roswell, Georgia, a sophomore majoring in animal and veterinary sciences.

A native of Buffalo and an extension educator from 1954 to 1980, Schoonover earned bachelor's, master's, and doctoral degrees at UW and provided leadership in the development of meat and beef cattle performance-testing programs.

Steve Paisley, beef cattle specialist in the department, serves as secretary-treasurer of the Wyoming Beef Cattle Improvement Association, which is currently conducting its annual bull test. Producers consign bulls for the 120-day program.

Information based on weight and ultrasound testing is used to select the top 70 percent of the bulls in each breed to sell at the WBCIA bull sale the first Saturday in April.

"It provides a way for people interested in buying bulls to get additional information," Paisley says. "It's also a way for producers to compare the genetics of their bulls with those of others across the state."

WBCIA was formed in 1984 by beef cattle producers and Cooperative Extension Service educators.



Family and Consumer Sciences

Plans for the new University of Wyoming Early Care and Education Center are moving closer to completion. After evaluating several sites on campus, a location on 30th and Coe streets was chosen due to its proximity to student housing and the university bus system. The new facility will consolidate the current University Child Care Center, Child Development Center, School-Age Care Program, and College of Education Pre-K program while adding infant and toddler care.

Special additions will include a multi-purpose area for gross motor activities, parent meetings, and multi-age programs; a breastfeeding support room; an on-site nurse's station with temporary sick-child facilities; a sci-

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ence/solar room to encourage children's understanding of growing plants and nature; an observation room with computers and video capability to better serve college student-training needs; and a full kitchen child-sized space to encourage cooking and nutrition-awareness activities.

The UW Board of Trustees approved bonding for the facility in the spring of 2002. TSP, an architectural design firm from Denver with expertise in education facilities, was chosen through an open bidding process in 2003. TSP has been working with representatives from the Department of Family and Consumer Sciences, the UW Child Care Center and Child Development Center, the Department of Elementary and Early Childhood Education, the College of Education Pre-K Program, ASUW, and Facilities Planning to design the new center. TSP visited the three existing projects on campus to get a feel for the philosophy of the programs and for the use and space requirements. They also used a charette process

(similar to one using focus groups) during several meetings to solicit input from key participants. Ideas were recorded at each session and were used to modify the plan.

A final meeting including the participation of College of Agriculture Dean Frank Galey and College of Education Dean Patricia McClurg took place in late fall. The plan will go forward to the Board of Trustees for approval and will then be ready for construction bids. The target date to occupy the new facility is fall 2005.



Molecular Biology

Five faculty members in the Department of Molecular Biology teach a major portion of the first-year curriculum for University of Wyoming students who have been admitted to the University of Washington Medical School through the WWAMI regional medical education program.

Associate Professor Kurt Miller is the course

coordinator for biochemistry, working closely with associate professors Pamela Langer and Mark Stayton. Professor Don Jarvis is the course chair and one of the instructors for microbiology and infectious diseases. Professor Dale Isaak co-teaches with Jarvis and is also the course director and instructor for immunology.

"In terms of the discipline of molecular biology, I'd say there is a very high correlation between having a background in molecular biology and doing well in the WWAMI program, especially in the biochemistry class," says Langer.

"Biochem is one of those subjects where it takes awhile for an integrated understanding to mature. Seeing the material two times from two different perspectives really gives the students a higher level of understanding."

Langer also says it is imperative that medical students understand the science when considering the physiological, psychological, and molecular biological aspects of human disease as well as clinical diagnosis and treatment.

She points out that the department also offers a "core background" of courses for students hoping to enter medical school.

"Another aspect which is very helpful for the students is the opportunity to do research in our department," Langer says. "Not only does it improve their chances of getting into WWAMI, but it also introduces them to how research is actually done and to practice the latest methodologies in molecular biology."

The associate professor says conducting research gives the students experience in troubleshooting, a skill she says will be valuable when dealing with human disease. "Furthermore, students in WWAMI are required to do research in the summer before their first year. The prior experience in a lab will also help them select a project and be able to accomplish more in the short time they have that first summer," Langer adds.

"Several students have elected to do a master's degree in our department before they enter WWAMI or

another medical program. In these cases they have an in-depth view of research which should help them throughout their time in medical school and in their futures as health-care professionals," she says.



Plant Sciences

Several researchers in the Department of Plant Sciences are using plant genetic improvement to tackle plant disease, sustainable cropping systems, and agricultural profitability issues. This year the research of Professor Jim Krall and Research Associate Jerry Nachtman in cooperation with University of Nebraska scientists led to the release of *Goodstreak* hard red winter wheat and *Forager* pea. They also released *Horizon* proso millet in cooperation with the University of Nebraska, Colorado State University, South Dakota State University, and the USDA Agricultural Research Service. *Goodstreak* winter wheat has higher yield and protein content potential and superior disease and insect resistance than *Buckskin*, the most common variety grown in Wyoming. *Forager* spring pea was developed as

a grain and forage pea for livestock feed. The variety is being marketed by Legume Logic. *Horizon* has the potential for early harvest with high yield while maintaining desirable seed weight and grain volume characteristics.

Associate Professor Robin Groose and Professors Fred Gray and Alan Gray continued yield and disease testing of a brown-root-rot-tolerant alfalfa genetic line they developed. They anticipate releasing the breeding line as a variety in 2005. This variety will be of benefit to alfalfa producers in Wyoming and other northern states where brown root rot has recently been recognized as a serious disease.

Krall, Professor and Department Head Ron Delaney, and Groose have advanced the development of an annual medic germplasm. After 15 years of searching world seed collections, they believe a genetic line has been identified that fits the dryland cropping systems of the northern Great Plains. The cropping system goal for this winter annual forage legume or green manure crop is to replace summer fallow. This nitrogen fixer establishes in the fall following winter wheat and provides early season grazing the next spring. When allowed to go

to seed, it will establish a soil seed bank that will regenerate for five years.



Renewable Resources

Paul Meiman is the new Cooperative Extension Service specialist for rangeland resources with the Department of Renewable Resources. Based in Lander, Meiman is completing a doctorate in rangeland ecology from Colorado State University in Fort Collins.

Prior to starting his graduate research, he spent nine months at Oregon State University, two years with the USDA Agricultural Research Service in Idaho, and more than three years as a county extension agent for agriculture and natural resources in Moffat County in northwest Colorado.

Meiman's bachelor's and master's degrees are both in rangeland ecology and watershed management from the University of Wyoming.

He can be reached at pmeiman@uwyo.edu or at (307) 332-1840. His office is in the Fremont County Courthouse.



Veterinary Sciences

Professor Donal O'Toole, head of the Department of Veterinary Sciences and the Wyoming State Veterinary Laboratory, has been elected vice president and will become president in 2005 of the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

The 1,256-person organization represents laboratories in the United States and Canada and has members in 34 countries. It accredits veterinary diagnostic labs on a five-year cycle and promotes the interests of state-based animal health labs to the U.S. Department of Agriculture, the Food and Drug Administration, the Environmental Protection Agency, and the Centers for Disease Control and Prevention.

O'Toole, who will serve as president-elect of the association in 2004, joined the faculty of the College of Agriculture in 1990. He received a bachelor of veterinary medicine degree from Trinity College in Dublin, Ireland, in 1977

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and a doctorate in veterinary pathology from Colorado State University in Fort Collins in 1982.

As leader of AAVLD, O'Toole will be in a position to help influence federal policy relating to the development of a national, linked diagnostic network based on the state-funded animal health laboratories and to funding for state centers that test for high-impact animal diseases such as foot and mouth disease. The association's leaders work with federal animal health officials in testing animals that are shipped internationally to ensure that diseases do not inadvertently cross national borders.

O'Toole is a diplomat of the European College of Veterinary Pathologists, a fellow of the Royal College of Pathologists, a listed specialist of veterinary pathology for the Royal College of Veterinary Surgeons, and a member of the Wyoming Veterinary Medical Association and the Royal College of Pathologists.

In other department news, the WSVL is converting to a new laboratory data-management system that it developed in order

to manage its diagnostic samples. The system is Web based and was largely devised by Todd Bleifuss, the information technology specialist in the department. There are few good laboratory data-management systems for veterinary diagnostic laboratories, O'Toole reports, and a critical property is the ability to mine the archives for disease information, particularly to recognize state-wide disease trends.



Academic Programs

The College of Agriculture's current Ag Ambassadors offer a wide background of experience and represent disciplines throughout the college.

Majoring in animal and veterinary sciences are sophomore Stacia Berry, sophomore Ashley Chapin, graduate student Tiffany Reed, senior Jennifer Reyes, and senior Jessica Zebroski. Pursuing degrees in agroecology are senior Colleen Boodleman, senior Josh Friesen, senior Shawna Klatt, and graduate student Ryan Rapp. Marty Tatman

and Kara Townsend are seniors majoring in animal science.

Juniors Megan Boomgaarden and Andy Huber are majoring in microbiology while ambassador Patricia Kelsey is a graduate student in family and consumer sciences. Agribusiness majors include senior Brandy Cochran, sophomore Emily Horton, and sophomore Alicia Randall.

Graduate student Michael Henn and senior Rachel Shorma are pursuing degrees in rangeland ecology and watershed management.

The ambassadors are official representatives of the College of Agriculture at recruiting events such as Discovery Days, Campus Pass, and the Campus Resource Fair. They meet with prospective students who tour UW and also visit their hometown high schools to offer information about agricultural offerings on campus and future career opportunities.

The group assists with a variety of special events such as the annual scholarship banquet. Members can be found at summer orientation activities, county

fairs, the state fair, and state and regional 4-H and FFA gatherings.

To be selected as ambassadors, students must complete an interview process and maintain an appropriate grade point average.



Cooperative Extension Service

Joseph Jen, the U.S. Department of Agriculture's under secretary for research, education, and economics, learned about the Wellness IN (WIN) the Rockies healthy lifestyle project during a visit to the College of Agriculture.

Jen, who oversees the Agricultural Research Service, the Economic Research Service, the National Agricultural Statistics Service, and the Cooperative State Research, Education, and Extension Service, is an agricultural scientist with experience in both public and private sectors.

The federal official is seeking ideas about how educators are tackling the nation's growing concern about obesity.

A USDA-funded, community-based research and outreach project involving UW, the University of Idaho, and Montana State University, WIN the Rockies offers multi-disciplinary educational programs aimed at helping people of all ages eat well, exercise well, and feel well.

After hearing presentations about the program from team members in the Colleges of Agriculture and Health Sciences, Jen visited Preston, Idaho, one of the project's three demonstrator communities used to pilot a variety of programs related to food, physical activity, and body image.

The Cooperative Extension Service Enhancing Wyoming Communities and Households Initiative Team sponsored a mediation training program aimed at teaching citizens and community leaders in Wyoming how to be successful mediators. Educators Mary Martin of Teton County and Rhonda Shipp of Park County assisted UW Associate Professor Alan Schroeder of the college's Department of Agricultural and Applied Economics as well as representatives of the Wyoming Department of Agriculture with the training.

Topics of discussion included personal conflict

styles, alternative responses, negotiation theory, active listening, the causes of communication breakdowns, alternative dispute resolutions, mediation processes and tools, dealing with strong emotions or culture, facilitator style and technical knowledge, multi-party and public policy disputes, decision rules and consensus, and ethics.



Agricultural Experiment Station

The U.S. Department of Agriculture has introduced a new strategic plan and revised the goals under which the Agricultural Experiment Station collects its impact information.

The new goals include: enhance economic opportunities for agricultural producers, support increased economic opportunities and improved quality of life in rural America, enhance protection and safety of the nation's agriculture and food supply, improve the nation's nutrition and health, protect and enhance the nation's natural resource base and environment, and create society-ready graduates.

Associate Dean and AES Director Jim Jacobs

reports that the revised USDA goals are in line with the following significant issues identified in public visioning sessions pertaining to the development of the college's new academic plan: land use, environmental issues, and improved public understanding of agriculture, private property, and federal land issues; forage-based livestock systems and healthy livestock and wildlife; the family farm/ranch (youth development and young people in agriculture); vibrant small communities, community leadership, and information basis for decision making; profitability of agriculture and economic diversity including niches and value-added products; agriculture, multiple use, and the endangered species act; water quality and availability; reclamation of disturbed lands and waters; and involvement of local citizens and agriculture in communities and state decision-making processes.



Ag Development

To tackle issues relating to the critical importance of water in Wyoming and the western United States, the College of Agriculture

is seeking \$3 million to endow a faculty chair in water resources.

The chair would enable the college to expand its well-recognized research program in water quality and to provide increased opportunities for training students to meet the nation's growing need for professionals in the field.

The impact of drought, energy development, governmental regulations related to water use, sustainable agricultural systems, the preservation of natural resources, and maintaining fresh water supplies to protect human, animal, plant, aquatic, and wildlife health would be among the research concerns involving the chair.

The establishment of the chair would enable the college to enhance its offerings for graduate students pursuing the water resources option and for students seeking degrees in rangeland ecology and watershed management.

For further information contact Anne Leonard, director of agricultural development and college relations, at aleonard@uwyo.edu or (307) 766-3372.



Research on the winter survival potential of crossed varieties of Austrian peas is being conducted in the College of Agriculture greenhouse by Associate Professor Robin Goose of the Department of Plant Sciences. Assisting him is Azize Homer, who has a master's degree in plant genetics and has conducted legume studies at the University of Nebraska and the Black Sea Agriculture Research Institute in Turkey. Goose would like to produce peas for dual use as a forage and a grain.

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Editor

Vicki Hamende

Layout and Design

Tana Stith

Send comments or suggestions to:

Dean Frank D. Galey
Department 3354
1000 E. University Avenue
Laramie, WY 82071
(307) 766-4133
agrdean@uwyo.edu

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OF WYOMING
College of Agriculture
Department 3354
1000 E. University Avenue
Laramie, WY 82071

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