

UW COLLEGE OF AGRICULTURE AG NEWS

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Dear Friends and Colleagues,

It was a challenging winter for many of us. Brucellosis reappeared in cattle in the western part of the state, costing Wyoming its "brucellosis-free" status. This resulted in increased testing mandates in order for cattle to move. In addition, the BSE case in Washington from a cow imported from Canada impacted the cattle market.

Your college is working on the brucellosis problem in several ways. The Wyoming State Veterinary Laboratory is testing blood samples through an agreement with the U.S. Department of Agriculture. Vet lab personnel investigated the problem in affected "reactor" cattle. In addition, the veterinary laboratory, in collaboration with Wyoming Game and Fish and USDA scientists, followed up with the testing of elk samples from the neighborhood. Recently, this office was asked to chair a Wyoming Brucellosis Coordination Team.

This team will investigate brucellosis in the state's wildlife and cattle and develop recommendations regarding the best practices to use to prevent further occurrences and research and policies to follow in eventually solving the problem of brucellosis in Wyoming wildlife and cattle.

In other areas of activity in the college, we are currently searching for new leadership in two departments. Ed Bradley is stepping back into the faculty after six years of service as head of agricultural and applied economics. Several candidates have been brought to campus to visit with us about their vision for the applied business of agriculture, natural resources, and our rural communities. We are also seeking a new head for the molecular biology department, which is a leader at UW in biomedical research, since Jerry Johnson will be returning to the faculty after three terms of service.

This issue of *Ag News* has a wide variety of articles spanning a Wheatland livestock tour, a study of moose habitat, distance learning, the hay hotline, and our veterinary preceptor program all the way to molecular biology research and medical education and much more.

Thanks to all of you who commented on the university Academic Plan. As mentioned in the last issue, that plan will have a large impact on how this college fares. Your voice does count. Please stay in touch with your college.



Dean Frank Galey

Dean Frank Galey
College of Agriculture

"Once you eliminate the impossible, whatever remains, no matter how improbable, must be the truth."

Sherlock Holmes

UNIVERSITY
OF WYOMING



Professor Jeff Lockwood discusses Henry David Thoreau's Walden with students in his new "Humans and Nature" course. In the fall he will teach "Deep Ecology: Promises and Perils."

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

Quietly, for a year, Jeff Lockwood has evolved from professor of entomology to professor of natural science and humanities.

His long kinship with the Department of Renewable Resources has segued into a new affinity with the Department of Philosophy.

Instead of teaching "Insect Anatomy and Physiology" or "Insect Population Biology," he is exploring "Humans and Nature" and "Environmental Ethics."

Articles in scientific journals and texts have been replaced by creative essays, poems, and books that integrate science, emotion, experience, intuition, and spirituality.

After 20 years as a successful, respected, innovative scientist who has left an international mark in his field,

A man for all

Lockwood has taken a career turn into the uncharted but intriguing waters of, simply, university professor and renaissance man.

"Science will always be an important experience from which I will draw," he says. "I can easily see myself going back into the field but not for funded work on pest management or ecological research. My interest now is in substantive natural history studies that would fit beautifully into things I want to do on the humanities side."

In giving up "the technical, the problem solving, and the cutting edge," Lockwood points out that he is also freeing himself from the financial rat race that accompanies extensive research programs.

"I was beginning to find that as you develop your career, you spend less and less time in the field and more and more time at your desk getting grants to fund other people. You become the generator of opportunities for them," he explains.

"It is nuts! If you become successful, you be-

come a manager of science. The more accomplished you are, the less fun you have."

Lockwood, though, is smiling again. "The changes have been huge," he says. "I used to spend a third of my time chasing money, a third writing technical publications, and a third doing scientific teaching, editing, and administrative work."

Now, he says, the thirds are creatively graced more to his liking by teaching and course development, reading, and writing.

In addition to offering philosophy and environment and natural resources classes, Lockwood is seeking opportunities through the humanities umbrella to play

Articles in scientific journals and texts have been replaced by creative essays, poems, and books that integrate science, emotion, experience, intuition, and spirituality.

reasons

roles in emerging master of fine arts and doctoral ecology programs and is helping to develop a minor called “Environmental Values.” Much of the reading he is enjoying will give him a foundation for these pursuits.

The writing time is allowing him to continue his ethical musings on the perplexing relationship between humans and nature.

Having already achieved publishing fame with an essay collection titled *Grasshopper Dreaming: Reflections on Killing and Loving*,

Lockwood is completing an accompanying set of essays called *Prairie Soul*. His poetry and meditations have reached wide audiences, and his name is now seen on the cover of the book *Locust: The Devastating Rise and Mysterious Disappearance of the Insect that Shaped the American Frontier*.

Lockwood acknowledges that his gradual desire to turn from scientific to philosophical pursuits was partly fueled by his interest in such literary explorations as well as by his wish to change the nature and deepen the meaning of his

contributions to the university.

As he melds into a new department, Lockwood is taking two philosophy courses to help glean insights for his new endeavors. “It’s really refreshing to have the sense that I could be good at this but to realize that these people know a heck of a lot more than I do,” he says. “I am not a trained philosopher, but they seem to be remarkably accepting of what I have to offer and what I can bring. It’s humbling, frightening, and exciting.”

Lockwood says his col-

leagues in the College of Agriculture have accepted his transition and generally respect his decision to journey along a road less traveled. The gap he has left in entomology instruction is being filled by faculty members with whom he co-taught, and his heralded grasshopper management work, he says, is being taken over by capable hands.

Although his professional “home” is still renewable resources and his main office is located there, his faculty position in the department exists through “an invisible umbilical cord.”

He thanks Department Head Tom Thurow for his generosity in not only allowing but also championing the arrangement and Philosophy Department Head Ed Sherline for enthusiastically opening his door. (See the accompanying story.) Dean Frank Galey, he says, added his encouragement.

“It is an extremely progressive move on Tom Thurow’s part to offer a faculty member to the university community at large. You don’t see too many professors given the blessing of their department to go serve another frontier,” he notes.

“It took the right department head and dean and the right institutional structure to allow me to plant a truly individual interdisciplinary foot on the other side of campus. My administrators have done me a tremendous service.”

The restlessness Lockwood felt a year ago has undergone a metamorphosis into “the best of all worlds,” he says. “I think I proved that I know something – science – and now I feel drawn to know something else, something more.”



Students in Professor Jeff Lockwood’s “Humans and Nature” class work in small groups to respond to Thoreau’s theory of what is “necessary of life” as outlined in Walden.



Ed Sherline, left, head of the UW philosophy department, has welcomed Jeff Lockwood, center, in his new role as a professor of natural science and humanities. An agreement involving the two as well as Tom Thurow, right, head of the College of Agriculture's renewable resources department, has allowed Lockwood to shift from entomological research to other endeavors.

Anatomy of a change

by Vicki Hamende,
Senior Editor
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Tom Thurow provided his own headline for an article discussing his feelings about sharing one of his faculty members with another department: "Dynamic, creative professor and two accommodating administrators put the needs of students first."

Ed Sherline, the second accommodating administrator, added his own kicker: "The university wins."

Thurow, head of the Department of Renewable Resources, and Sherline, his counterpart in the Depart-

ment of Philosophy, have both made it possible for Professor Jeff Lockwood to matriculate from entomological research involving organisms to humanities projects integrating the mind, body, and spirit.

When Lockwood first approached Thurow more than a year ago to seek his support for the change, Thurow says he understood and respected the professor's desire to bridge the gap between science and philosophy in a meaningful way.

"Most of the people who do so are educated as classical philosophers and then try to understand natural science and agriculture. Almost no one edu-

cated classically as a scientist develops the kind of insight needed to participate in the philosophical arena. Jeff clearly has the intellectual horsepower to do that," Thurow says.

"Jeff identified this gap as a weak link and a limiting factor and decided to focus his future energy on combining the disciplines. There's no doubt that he will do outstanding things and continue to make significant contributions," he adds.

"More importantly," Thurow notes, "his new direction benefits the students. If we focus on what is going to be best for them and then move from that

starting point to determine how we can make good things happen, I think we are doing our jobs well. That's what I tried to do in this case."

He cites the importance of readying students to be critical thinkers who can stride the gulf between nature and the humanities in facing bioethical issues that cannot be answered by science alone.

"We are training them to deal with a lifetime of cutting-edge innovations that will affect the environment, our health, and our lifestyles. Jeff's research and teaching will help prepare students with skills they can store in their intellectual

toolbox to help them face the unique situations that will certainly occur in the future,” Thurow says.

“When Jeff came to me, I appreciated that his new role would be a very important one for students and society and that he had the intelligence to pull it off. So I said go for it, do well, tell me what we need to do to make this happen,” he recalls. “I was very happy to facilitate his desire to challenge himself and to serve students in an expanded way.”

Sherline remembers the day he turned on his computer and discovered an e-mail from Lockwood that started out, “Ed, I have this problem . . .”

“My reaction was, ‘he actually wants to teach for us!’ It was a godsend. It was winning the academic lottery,” Sherline says. “Jeff is one of the most respected professors on campus. He is a very successful researcher, a great teacher, and a wonderful colleague. It was an offer we couldn’t and wouldn’t refuse.”

The associate professor of philosophy says he admired Thurow’s “willingness and generosity” and thought it was “refreshing to find such a broadminded department head who didn’t guard his faculty positions with jealousy.”

The three men met to develop an agreement between the two departments that would also allow Lockwood to teach courses in several different humanities programs.

“I think it is a model of how to create interdisciplinary partnerships that don’t involve an administrative changeover and that avoid the bureaucratic walls that can sometimes undercut such pairings,” Sherline says.

He is glad to have his department as one of the beneficiaries. “Jeff is an amazing person to have around. He is full of energy and intellectual enthusiasm. He’s the glue that brings faculty members, graduate students, and undergraduates out in the hall talking together. His excitement is infective,” Sherline says. “Instantly he made our department much stronger.”

Lockwood maintains a shared office in the philosophy department and is gradually becoming part of the culture of his new surroundings. “He feels fortunate, and we feel fortunate,” Sherline adds. “There are so many areas where his presence has added depth.”

He points out that his department now has a closer working relationship with the environmental and natural resources program

thanks to courses Lockwood and philosophy colleagues are teaching.

Sherline notes that Lockwood has been sitting in on philosophy classes to involve himself in the kind of discourse that interfaces science and intellectual thought. “He’s an extraordinary student who is there simply because he wants to learn and loves it. Jeff does all of the reading and is an excellent participant in the discussions without threatening the role of the instructor,” Sherline says.

“He can bring up examples of how science works to counter arm-chair philosophical depictions of scientific practice,” Sherline explains. “He adds the expertise of someone who has been in the trenches, and he

“If we focus on what is going to be best for students and then move from that starting point to determine how we can make good things happen, I think we are doing our jobs well.”

Tom Thurow

has an enormous amount of credibility with the students when it comes to teaching in these areas.”

Thurow also points to Lockwood’s professional integrity. “He has a very illustrious, high-impact career regarding his disciplinary research in entomology. He can and does feel very proud of that,” Thurow says.

“The citizens of Wyoming and semi-arid areas in the world have dramatically benefited from his research. He has not only made control of grasshoppers and locusts more effective and more economical, but he has also made it more environmentally friendly,” the renewable resources professor adds.

“He looked at his career and questioned whether working in these areas for another 20 years would be the way he could make the biggest impact for science. I think he has chosen a wiser path,” Thurow says.

“Most scientists spend their entire graduate and professional careers going down one track. It’s not an easy thing to change directions, but Jeff has the unique capability to pull it off,” Thurow says.

“It was a creative move driven by a recognition of the needs of our students. That would be the best story line.”

Surfing the web

by Vicki Hamende,
Senior Editor
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Pam Langer remembers embarrassing her mother when she was little by pointing out cobwebs in other people's houses.

She is still looking at webs, but now they come from orb-weaving spiders that recycle their silk. These same spiders may be able to "degrade" the silk as well. If the properties of silk can be manipulated, its fibers can perhaps be designed to accommodate important biomedical and biotechnological applications.

"It seems very exciting to me," says Langer, an associate professor in the Department of Molecular Biology whose research complements that of colleague Randy Lewis.

"We figured that if a spider can recycle its web, it must also have the enzymatic machinery to degrade its silk. So, we started looking for that enzyme," Langer says.

The first stop was digestive juices. When spiders want to eat their prey, they spill the contents of their stomach on their victims and use sort of an "insect tenderizer" mix to predigest their food. "Then they use their sucking stomach to draw in the predigested material," Langer explains.

"Spiders can't eat big things like we can. They don't have the mechanism for chewing, so they have to degrade their food and bring it inside in the form of an insect soup," Langer says. "We figured that's where the silk-degrading enzyme would be."



Senior Josh Rollins of Green River, a health sciences and nursing major who hopes to attend medical school, assists Langer in her laboratory. Here he gently opens the cage of a cricket-munching spider to collect its digestive juices.

After a few years of research, Langer and her collaborators have identified an enzyme that they named "spidracin." It is similar to a digestive enzyme in crayfish, but unlike the crayfish model it can degrade a spider's major ampullate silk fiber. This is the same type of fiber a spider uses in its dragline silk, the safety line that allows it to move from one place to another.

"In order to find out if spidracin was in fact the silk-degrading enzyme, we had to isolate the protein and sequence it to help us identify a gene for this enzyme. Once we got the

gene, we could figure out if the protein was similar to any other known proteins. The next step was to use the gene to make a synthetic enzyme that could degrade the silk just like the prey tenderizer mix does," Langer explains.

"Now we are studying the activity of the new protein. Our most immediate goal is to get the synthetic enzyme into a form that can degrade spider silk. We want to find out what is special about the enzyme that allows it to degrade silk since silk is typically very resistant to proteases (enzymes that catalyze their breakdown)," Langer says.

"Any time there's an enzyme that does something very unusual, that enzyme becomes interesting. It might have novel properties that would be useful in other contexts," she explains.

"The structure of silk is similar to other kinds of molecules that we would like to be able to get rid of like certain proteins in Alzheimer plaques. There could be other things that could be degraded by this enzyme because of its novelty," Langer says.



Associate Professor Pam Langer of the Department of Molecular Biology shows the intricate multi-level web created by one of her grass spiders. This web goes on tour for spider shows in local elementary schools.

The results of the research could lead to new biomedical or biotechnological applications, she adds, including the removal of unwanted biomaterial, insecticidal use, or the targeted degradation of proteins in clots and scar tissue.

“You have to go out and look for the applications because in the beginning there’s no way to tell what they will be.”

One particular motivation for the research, the associate professor says, is to help design silk fibers that can be used in repairing tendons and ligaments.

“If you want to use spider silk in the human body, you need to know something about how the body will react to it. Our tissues have a lot of

proteases, so if you want something stable in the body you need to understand how it can become degraded and how you can make that silk more resistant to degradation,” she explains.

“On the other hand, if you want to exploit the properties of designer silk fibers for use as biomedical sutures, you’d probably want a fiber that would allow the stitches to degrade within a certain period of time. Physicians are already using silk worm silk in sutures, but there are some indications that spider silk wouldn’t cause the allergic reactions that silk worm silk does,” Langer adds.

“A lot of the focus in what Randy Lewis is doing now is to design silk fibers that have the degree of strength and elasticity that we want,” Langer notes. Considering the biocompatibility of fibers that will be put into the body is crucial for avoiding inflammatory reactions and the premature disappearance of the synthetic silk fibers. “My work complements his work very well.”

Silk, she explains, is made up of repeating units. “Lewis’s group is trying to

manipulate different things in those units to change the properties of the resulting silk fibers. Our role will be to see how resistant those different fibers are to degradation.”

The first step is to look at the susceptibility of the spider silk to the spider’s own enzyme. “Specifically we’re making synthetic recombinant proteins that degrade silk and testing properties of these enzymes to determine which will degrade it the best. We’re drawing on the repertoire of the spider world. We’re not yet trying to make those changes ourselves but rather looking to see what already exists,” she says.

In addition to studying orb weavers such as the golden silk spider, Langer is researching “hunting” spiders that “pounce” on their prey. They have a similar spidracin enzyme, but it does not seem to degrade silk very well.

“Now we have two protein cousins. One degrades the silk quickly, and the other doesn’t do it very well. We can look at what is different between the two enzymes and make a very nice comparison,” she says.



Large spiders such as this one are being used by Pam Langer to help understand how the properties of their silk webs can be manipulated for helpful uses.

Oblivious to the fuss, large hunting spiders from Arizona with names like Agatha, Beatrice, Carmen, Darcy, Ernestine, Francine, Georgina, and Helga happily devour crickets in their laboratory cages. They are put to sleep with carbon dioxide, taped gently on their backs, teased with some cricket mush to stimulate production of their digestive juices, and then allowed to carry on while the juices are collected and studied.

Langer remains fascinated by her orb web and cobweb-building friends and the complicated possibilities they weave.

“With spiders, things change every time you get a new result,” she says. “You always find an unexpected turn that leads somewhere else.”



No degrees of separation

by Vicki Hamende,
Senior Editor
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One student from Georgia is bringing her whole family along for graduation. Others are expected from states like Illinois, California, Montana, New York, Colorado, and Florida.

They are University of Wyoming distance learners,

earning degrees in family and consumer sciences via technology with the help of online instructors dedicated to making them feel connected to their school.

“They have never set foot on campus, but they’re coming for graduation. It shows that they are committed, which is what we wanted,” says Associate Professor Karen Williams, head of FCS.

The only department

in the College of Agriculture to offer a distance degree, family and consumer sciences currently has 48 active majors and a new group of students already accepted, full classes, and waiting lists containing as many as 50 names and including women and men with backgrounds in several different disciplines.

An option is offered in professional child development, and another one in family and community resources will be online next spring.

“There’s a big demand in the job market for early childhood training. It is really coming to the forefront,” Williams says. “People realize that working with children from birth to 8 really isn’t babysitting. We need graduates with education in child development and early education at that age level.”

Williams, along with faculty members in her department and carefully selected adjunct instructors with advanced degrees and teaching experience, offers 10 online and distance-supervised courses complete with practicums and in-

ternships. “We are breaking new ground,” she says.

The spring courses include perspectives in family and consumer sciences, fundamentals of adult aging and human development, child development (plus a practicum and internship), personal finance, marriage and intimate relationships, philosophical and research perspectives in family and consumer sciences, parent-child relationships, and families of young children with special needs.

“Because the demand for our program is so great, we’re trying to develop a course rotation that is frequent enough to meet students’ needs and won’t result in overly large class sizes,” Williams says.

“The students appreciate our courses and our instructors because of the quality of learning experiences they get and the quality of interaction between students and faculty. They want programs that are challenging and meaningful. I think we are doing a phenomenal job of creating educational experiences for them online,” she adds.



Single mother Suzanne Phelps of Dunedin, Florida, shown with her daughter Morgan, is another online degree candidate at UW.



“There aren’t very many distance programs out there that are accredited and of good quality. So they are finding us.”

A main goal is to develop learning communities that unite off-campus students with each other and with their campus counterparts. “It’s a neat broadening experience to bring these two groups together for the first time,” Williams says. “Doing so will strengthen learning for both groups. It’s also good for our students to take classes with people from other majors.”

She hopes to develop “companion shells” for courses to foster more interaction and threaded discussions.

Online students, meanwhile, are privy to every regular classroom learning amenity. Instructor Sarah Lee of Wheatland, for example, utilizes group presentations, guest speakers, and “chat rooms” for instant interaction. Her pupils even go on “virtual field trips” to other universities to “talk” with students there.

Videos help the instructors observe students completing their internships and practicums.

“Their requirements are the same as for our in-class students. I can’t ethically deliver it any other way,” Williams says. “I feel pretty good about knowing our students. It’s tricky to do distance supervision, but we figure it out.”

Student LaShawne Booker of Alexandria, Virginia, is on active duty with the army and has completed two tours in Iraq while also attending UW. She took a final exam last spring from Moscow.

The fact that students are given consistent advisers throughout their programs is especially important to people like Booker. “The adviser becomes the lifeline,” Williams says.

The online classes began as a way to reach out to students in rural communities in Wyoming looking for personal development beyond associate degrees at junior colleges. “Then we started getting calls from around Wyoming, nationally, and even



Kathy Rigby of San Antonio, Texas, is a Montessori preschool teacher earning an online degree in family and consumer sciences through the University of Wyoming.

outside the nation,” Williams recalls.

“The students all have different needs, so we have to individualize the program as much as we can to allow many of them to take only one or two courses a semester while others take a full load.”

Williams points out that many of the enrollees are low-income, first-generation college students juggling jobs, children, families with illnesses, and other hardships.

“They are the most dedicated, strong bunch of

women I have ever met,” she says. “That’s what motivates me to keep this program going. I know we are serving a unique need in the state and in the nation. It’s pretty powerful.”

Williams confesses that she wasn’t a believer in distance education at first. “I don’t think it is for every kind of degree. There are some things the technology won’t work for, like our drafting and draping course, but other things for which it works quite well.”



Dances with

by Vicki Hamende,
Senior Editor
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and Technology*

Increasing numbers of moose grace the slopes and lakes of the Snowy Mountain Range.

Eric Wald watches them.

How many are there? Where do they roam? What do they eat? How much do they eat?

He wants to know.

A doctoral candidate in the College of Agriculture's Department of Renewable Resources, Wald intends to collar the moose that have been migrating to southeast Wyoming from Colorado, to chart their habitat, and to help the Wyoming Game and Fish Department and the U.S. Forest Service develop population management strategies and future habitat enhancement projects.

"The overall objective is to look at winter habitat for moose within the Snowy range," says Wald, who is being mentored by Professor Rich Olson.

"I want to build a prediction model using litera-

ture-based data and incorporate that into a geographical information system. I can throw in some math functions and paint a picture of where potential moose habitat will be," he adds. "That's step one."

To validate his formula, Wald hopes to collar the animals with receivers and to develop satellite data to see how closely the moose follow the prediction model.

Once the habitat is pinpointed, "the next objective will be to determine food habits for moose and then try to estimate a carrying capacity to determine how many moose the key forage species in the Snowy range can support without harming the environment and affecting other wildlife," Wald says. "The principles are the same ones that are applied to monitor cattle grazing."

One of the end products will be seasonal range maps of moose territory that will aid the game and fish department in determining how many, if any, hunting permits should be issued in a given year.

During a trial-run season in the Snowy Mountain Range in 2000, five licenses

A bull moose in the Snowy Mountain Range catches Wald's camera eye.

moose

were issued. Although there was no season in 2001, increased sightings of moose led to 10 permits in 2002 that were 100 percent successful. The number increased to 15 in 2003. “I foresee that we will keep harvesting moose here for awhile at least in low numbers,” Wald says.

The Ph.D. student came by way of first his home state of North Dakota and then South Dakota to watch moose. He earned a bachelor’s degree at South Dakota State University in wildlife and fisheries sciences as well as one in range science. In addition, he recently completed a master’s degree in biological sciences at the same school. “This project includes both the wildlife and range science aspects that interest me, particularly plant and animal interactions,” Wald says.

He is currently learning how to use the software needed to develop his prediction model and plans to spend the summer doing preliminary vegetation analysis, focusing on the willow species that serve as the staple dietary forage for moose.



Eric Wald, a doctoral candidate in the Department of Renewable Resources, explains his research goals.

The next step for the four-year project depends on grant funding, something Wald, Olson, and collaborator Frederick Lindzey, an associate professor in the Department of Zoology and Physiology, are seeking.

The crucial collars to track the moose cost \$2,500 apiece, and Wald estimates that capturing each moose to attach the devices will add another \$500. Ideally, he would like to tranquilize the animals by helicopter, but flying time absorbs

about \$500 per hour and heavy timber in the mountains might make it difficult to locate the animals by air.

“Plan B is to go out after a fresh snow to track and dart them on foot,” Wald says. “Of course, that will take more time and effort, and access may be limited due to heavy snow.”

A departmental research assistantship and funds from an auction of the governor’s big game licenses are currently supporting the project.

“I guess right now I have to face the realities of how to make the moose project a success,” he says. “It’s a big challenge and a good learning experience. It’s like welcome to the real world of getting money for research.”

In the future Wald hopes to do more hands-on field work, perhaps with federal agencies. “I really like to be out there with the wildlife,” he says. “You can’t see a moose while sitting at a desk.”

From the classroom to the field

by Vicki Hamende,
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The University of Wyoming may not have its own veterinary school, but it provides preceptors to students from throughout the nation and world hankering to roll up their sleeves and trade the classroom for the field.

Since 1984, students in their final year of veterinary training have been traveling to the Wyoming State Veterinary Laboratory (WSVL) from Colorado, Wisconsin, Virginia, Minnesota, Iowa, Texas, Washington, California, Oklahoma, Mississippi, and even Germany and Brazil to work side by side for a few weeks or a few months with College of Agriculture faculty members.

After immobilizing deer for tonsil biopsies, drawing blood from elk, and performing necropsies on diseased animals, many of them have gone on to noteworthy careers as wildlife veterinarians.

Many veterinary colleges allow their students to visit other places to seek specialized training that might not be offered at their own medical centers.

“When I came here I was contacted by folks who wanted to have the opportunity to work with wildlife at a diagnostic laboratory,” says Professor Beth Williams of the UW Department of Veterinary Sciences.

Williams herself benefited from preceptors when she was a senior at Purdue University, receiving training at zoos in Washington, D.C., and Toronto, Canada, as well as doing work at two other universities.

“I spent a month or two in each of those places. It was wonderful to be allowed to meet so many people and to find out what I wanted to do,” she says.

“Because I was offered such a great opportunity, I thought it was important that we should get involved as well,” Williams adds.

Using the WSVL as their home base, the visiting students also have access to hands-on experiences with the Wyoming Game and Fish Department and the Colorado Division of Wildlife.

“It has turned out to be a good program for the students, and it’s always nice for us to have them here. These kids have really done some neat things.”

Williams has a pat answer when newcomers inquire, “What am I going to be doing when I get there?” The response: “Whatever comes in the door.”

“We like to have them here when there’s going to be a lot going on, but we never know for sure what will be happening. It helps if they are self-starters because plans change sometimes. Animals don’t always cooperate.”

For sure the students rotate through the research projects underway in each laboratory and often conduct retrospective studies on particular diseases. They assist in preparing cases, deciding what tests need to be run, and analyzing the results.

Inevitably they also end up in boots and jackets tromping through mud and snow and braving the wind to conduct research in the wild.

“Even though we offer them an informal sort of training, we hope to help them guide their career choices,” Williams says. “We do try to be flexible to meet their needs.”

Apparently such guidance has helped. Mark Miller, a wildlife veterinarian with the Colorado Division of Wildlife and a now a collaborator in research with

Williams, recalls the month he spent in Laramie during the summer of 1984.

“As a veterinary student at Colorado State University who planned to practice wildlife medicine upon graduation, one of my frustrations was the lack of organized instruction in wildlife medicine within the professional veterinary curriculum,” Miller says.

“My preceptorship at UW provided a tremendous opportunity to learn more about a variety of wildlife disease problems and, more importantly, to work with established wildlife health professionals widely regarded as leaders in their field,” he continues.

“A demanding case load and a diversity of subject material provided the foundation for a very comprehensive, albeit brief, exposure to wildlife pathology, research, and medicine,” Miller says.

“Perhaps more importantly, the supportive environment for pursuing a career in wildlife medicine contrasted sharply with the generally discouraging atmosphere at CSU, where I was told that I was simply ‘wasting time’ in such pursuits,” he notes.

Walter Cook, a veterinarian with the Wyoming Game and Fish Department, spent a three-month “externship” at UW in the spring of 1994 while he was a senior at the University of California in Davis.

“During my externship I did a small study testing the brucellosis vaccine RB51 for safety in deer mice. This project and other things I experienced at UW solidified my interest in diseases that are common to wildlife and livestock,” Cook says.

“After graduating from vet school, I came back to UW to do a Ph.D. studying brucellosis in elk and ways to minimize the risk of transmission from elk to cattle. The Ph.D. was inspired by my externship,” he says. “It in turn opened the door for me to work as a wildlife veterinarian, which I have done for the last seven years.”

Melissa (Chechowitz) Miller values the month she spent with Williams in the spring of 1994. “I consider Beth Williams one of the finest and most ethical wildlife pathologists I’ve ever known. She is recognized internationally by the veterinary wildlife community for her dedication, professional-

ism, and significant contributions to the field of wildlife disease, pathology, and wildlife conservation. I am grateful for her sage advice and kind mentorship early in my career,” says Miller, now a veterinarian for the Marine Wildlife Veterinary Care and Research Center at the California Department of Fish and Game.

Others on the lengthy list of students who have worked with Williams as well as with Assistant Professor Todd Cornish and Pro-

fessor Donal O’Toole, head of the WSVL and the veterinary sciences department, are wildlife and general practice veterinarians and teachers in many corners of the globe.

Because the preceptor program is a non-traditional one that does not involve enrollment for UW credit, Williams says it can be a financial burden to students who have to pay for their travel and room and board in Laramie while maintaining their residences and

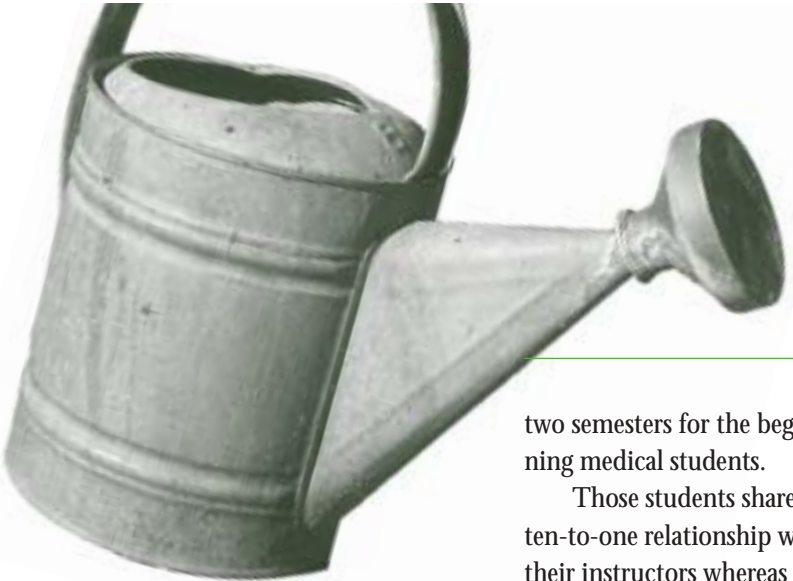
scholastic standing at home. She would like to find a way to help subsidize their UW experience.

Meanwhile, there are plans to honor the students who have lent their curiosity and talents to the veterinary laboratory for the last 20 years by listing their names on a plaque. New ones would be added each year.

“We benefit from them because they bring new ideas,” Williams says. “It’s a boost to us to have students around who are so excited.”



Veterinary students Justin Brown of the Virginia-Maryland Veterinary School and Brittany Baughman of Mississippi State University take a blood sample from an anesthetized deer at the WSVL. Both worked with preceptor Beth Williams to gain a month of wildlife field experience.



Growing doctors

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

What does the College of Agriculture have to do with medical school? A lot.

Its faculty members play a major role in providing future Wyoming physicians with a challenging first year of medical education.

Through the University of Wyoming's participation in the WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) regional program, up to 10 state-based students a year admitted to the University of Washington School of Medicine can complete their first year of clinical classes in Laramie.

Professors from the Departments of Molecular Biology and Veterinary Sciences have joined with colleagues in the College of Health Sciences and the Departments of Zoology/Physiology and Statistics to offer 50 credit hours across

two semesters for the beginning medical students.

Those students share a ten-to-one relationship with their instructors whereas their counterparts in Washington have close to 200 classmates. One-on-one preceptor training with local doctors is added to the package.

In the molecular biology department, Associate Professor Mark Stayton serves as the course chairman for biochemistry, co-teaching with Associate Professors Kurt Miller and Pamela Langer. Professor Don Jarvis is the chairman for microbiology and infectious diseases and also teaches virology. Professor Dale Isaak teaches bacteriology and immunology.

From the veterinary sciences department, Professor Merl Raisbeck teaches cell physiology while Associate Professor Bill Jolley offers a parasitology course.

"The College of Agriculture has been very supportive from the get-go," says Sylvia Moore, director of the division of medical education and public health for the College of Health Sciences. She praises the current instructors as well as Frank Galey, dean and

former head of veterinary sciences; Jerry Johnson, head of molecular biology; and former dean Steve Horn for giving the program its initial boost.

"What we offer is truly interdisciplinary," Moore says. "We have all of these folks from throughout campus plus the community involved in educating our medical students. As a team they have worked very well together, and that's a credit to everyone involved."

Students who successfully complete their first year of medical school course work move on to the University of Washington campus in Seattle for three more years of undergraduate medical education, followed by graduate education as residents.

They pay four years of tuition to the University of Wyoming, and the state legislature loans them the difference between the tuition and the actual cost Wyoming must pay for each seat in the medical school for years two through four — \$150,000 — a sum they do not have to repay if they return to the state to practice. The legislature first authorized Wyoming's participation in WWAMI in 1996.

Some of the students in the first class, which began in 1997, are currently completing residency training.

"The legislature is investing money to get some physicians for the state. If they don't come back, they have to pay the money. We don't want the money, we want the doctors," says Isaak.

"We can't justify financially having our own medical school, and it's a problem getting our students into other programs because of out-of-state quotas," Isaak adds. "We have a lot of excellent pre-med students in Wyoming who are very qualified to excel in a medical school. We get them started with the clinical experiences we can offer, and then it's perfect for us if they eventually come back."

Moore says the 10 students face a grueling schedule with up to 30 hours a week of seat time. "There's a phenomenal amount of information that they have to process in one year," she notes. Course work is combined with critically evaluating medical literature, investigating research questions, and using search engines to gather information.

in Wyoming

“Medicine changes so quickly,” she adds. “Staying abreast of things is going to be a challenge they will have to face when they get into the profession.”

While the current students express some concern about whether there will be enough jobs for them in Wyoming after the WWAMI graduates ahead of them return to the state and note that they are closely watching a study on the future of rural health care, they say they are grateful for the opportunity to stay in their own backyard for a year and to receive funds to help them get started with their medical education.

“The biggest advantage is the small class sizes and the continual access to our professors,” one student comments. “We’re not at all intimidated to ask questions because we feel more like a family. We have conversations in class as opposed to being in a strictly lecture situation. It will be nice when we move to Seattle to have nine people we already know well.”

Another student praises the quality of instruction both in and out of the classroom. “We get a lot of great

attention and are able to work with our professors on biomedical research. We also have excellent preceptors and have the advantage of working one on one with them. The students in Seattle have to work in groups with their preceptors.”

One student sums up her feelings by saying, “You can’t get anything better than this.”

Faculty members say they are excited about their role in educating future physicians. “We are a pretty dedicated group of instructors,” says Miller.

In addition to the advantages afforded the medical students, he adds, the teachers benefit as well.



Professor Dale Isaak of the Department of Molecular Biology is one of several faculty members in the College of Agriculture who offer an interdisciplinary biomedical background to first-year WWAMI students.

“Through our affiliation with these medical courses we learn a huge amount of information that we can bring to our undergraduates. I think that helps to put the hook in and get the students more interested,” Miller explains.

He says he values the collaborations that have developed with colleagues at the University of Washington and with the other participating institutions. “The flow of expertise and information between the schools strengthens the faculty members on both sides. We pass that along in one way or another to our students,” Miller says.

“We also have complete access to the medical library in Seattle and to other teaching support materials,” Miller adds, “and we receive unrestricted money each year from the state that is pumped right back into our research labs to help our graduate and undergraduate students.”

He also points to the “trickle-down effect” of WWAMI as providing an opportunity for his department “to contribute to the College of Agriculture’s mission of human health” and giving outreach benefits to clinics and rural doctors around the state.

Isaak, whose first position was at a medical school, says he appreciates the opportunity to teach professional students along with the undergraduate and graduate students under his wing. “It offers a totally different challenge that I really like,” he explains.

Like Miller, he relishes collaboration with the University of Washington School of Medicine faculty members. “They would come here at the drop of a hat for free to give any lecture that we asked them to,” Isaak notes. “They are at one of the top five medical



WWAMI medical students complete 50 credits of coursework their first year as well as spending several hours a week in training with Laramie physicians.

schools in the country, and we feel fortunate to be working alongside them.”

Moore says an intangible benefit is the chance to work with bright students who learn quickly. “It’s fun to teach the cream of the crop,” she says. “Medical students ask hard questions. Staying one step ahead of them is always good for us.”

Are the students staying on equal footing when they move on to join their fellow classmates in Seattle?

“They go from a group of 10 to a group of almost 200, but they seem to transition just fine. They hold their own; there’s no problem,” reports Moore. “If anything they are better prepared because we offer them more individual attention here. They do well on the common exams and standardized boards and clinicals, and that’s reaffirming for our faculty members, too.”

Miller says the Wyoming instructors work closely with their Washington counterparts

to make sure that the students are receiving parallel courses with standard syllabi and lecture development. “We have very considerable local authority in what we do. Things don’t have to be lock-stepped, but they have to be close for accreditation purposes,” he says.

In addition to weekly communication with the course chairpersons in Seattle, Wyoming faculty members attend regular meetings there to promote collegiality and to share ideas.

“It’s a great partnership all around in terms of providing quality education and involving physicians in the state,” Moore says. “It’s important for Wyoming to feel like it has a role in the education of its medical students.”

In addition, she notes, the students are fun to have around. “We beat them up pretty badly in the first year, but we try to send them off with at least a tempered idealism so that they’ll come back to us.”

Hay, hay,

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

Hey, producers! Need to buy hay? Need to sell hay? The “Hay Hotline” can help.

A joint project involving the University of Wyoming Cooperative Extension Service and the Wyoming Business Council, the Wyoming Hay List Web site serves as a free online marketplace for forage buyers and sellers.

Whether hay is hard to find in years of drought or plentiful in between, the hotline promotes Wyoming products and offers regular updates to link those seeking with those providing.

First organized by UW and the Wyoming Department of Agriculture more than a decade ago when the Internet was in its infancy, one of its earliest promoters was Professor Alan Gray, director of the Powell Research and Extension Center.

The site (www.uwyo.edu/ces/haylist/default.htm) recently received a facelift with help from Randy Anderson, a computer support specialist with CES Communications and Technology; Scott Keith, livestock/forage and cooperative develop-

we're the hotline!

ment specialist with the AgriBusiness Division of the Wyoming Business Council; Dallas Mount, CES educator in Platte County; Patty Thompson, office associate at the Powell center; and Gray.

"Before it was just a list of all the producers of different classes of hay," says Keith. "We all got together a few months ago and brainstormed about what would make it look better, read better, and offer more."

Help was also sought from CES educators who work with hay producers and from producers themselves.

"We have been able to go in and regionalize the information on the site," Keith says.

"Now people can research by location," adds Mount. "For example, if you are a producer in the southeast area who just needs a couple tons of hay and are interested in looking at lists from Worland and Jackson, you can just search those spots."

Those seeking to buy hay can gather information from each listing about the type, cutting, packaging, and number of tons of available hay along with descriptive comments about the product. Also given are

the name, address, phone number, and e-mail address of the seller.

"Another big improvement," Mount says, "is that people can enter their own hay listings now by filling out an online form and submitting it without having to make a phone call or send in facts and information. The system is much easier to use."

Keith points out that the format has also been changed so that all of the text appears onscreen and horizontal scrolling is no longer required to view everything.

"There are also links to USDA market reports so that producers can check hay prices all over the country," Keith says. "They can find out what kind of price tag they need to be looking at if they are selling or buying."

The restructured site also includes connections to published research materials and articles pertaining to hay and hay market issues.

"We've had some very positive feedback and comments about all of the improvements," Keith reports. "We have updated the site so that it's now a 21st century tool for people. In many cases we are a step ahead of what other states have to offer in terms of advertising their hay."

Even before many of the changes were implemented, the hotline was receiving thousands of hits per year.

Users can key in on categories such as alfalfa hay, pea/oat hay, grain, alfalfa hay cubes, hay needed, crop aftermath, grass hay, straw, summer pasture, mixed hay, silage, pasture needed and for rent, horse feed, backgrounding, trucking, hay brokers, seed, organic hay, hay auctions, and other services.

The committee working to improve the site hopes to add more links in the future to other agricultural Web connections.

"We're anxious to see what the ongoing response will be to the additions we've made," Keith says. "With this year's hay market it will be tough for producers to try to get anything sold. The Hay Hotline is a catchy tool to use to advertise and get the message out there," he notes.

"We're running ads to let other states know that we have an abundant supply and a pretty decent price right now," Keith says.

"The bottom line is that we raise a tremendous quality hay product outside of what the requirements are in the state of Wyoming. We want to help people find out about us."



The case of the poisoned

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

Being a veterinary toxicologist is akin to being a detective. Animals mysteriously die, and once the butler is ruled out the real investigative work begins.

Merl “Sherlock” Raisbeck, a professor with the Department of Veterinary Sciences, has been polishing his pathological magnifying glass for almost 25 years.

Far from the bumbling Columbo who plods along and then zeroes in on the culprit, Raisbeck’s work is steadfast, scientific, and often startling.

“Toxicology is fun,” he confesses. “Poisoning isn’t that common, but when it does occur it’s usually dramatic and quite interesting.”

Having sleuthed his way through several fairly high-profile cases, Raisbeck knows that solving an animal slaying is especially difficult because none of the witnesses can talk.

When 137 of 170 animals in a herd of beef cattle in central Wyoming sud-

denly showed up dead one morning, Raisbeck helped perform on-site necropsies and also studied animals still alive that were tearing, over-responding to sounds, displaying a lack of coordination, staggering, and acting overly aggressive.

“It was an unusual thing to see in cattle, and we ran every test under the sun,” Raisbeck recalls. “They were well fed and in good condition, and bulls and heifers in a nearby pasture weren’t aggressive at all,” he adds.

After discovering that the sodium levels of the animals’ brains were off scale, Raisbeck focused the investigation on salt poisoning aggravated by water intoxication. A well had dried, and then there was a power outage. “After a day or two without water, cattle can tank up and take on too much water at once,” he explains.

Oil drilling had been done in the spot 30 to 40 years before, and the creek that ran through the area was normally very saline. “So it was like the cattle had been fed massive amounts of brine sea water,” he says.

“We hypothesized that if brine was what they were on all winter and then suddenly switched to fresh water from the Chinook-caused snowmelt, that going from high saline to very fresh water in theory could cause what we saw,” Raisbeck says.

“We tested for more than 40 to 45 things, but nothing else came up except the salt.”

An unusual case of microcystin poisoning left Raisbeck clueless at first, he says. Caused by blue-green algae that grow in water, the toxin is generally a warm-weather problem and is not common in Wyoming.

Yet one morning in March, three purebred

Gelbvieh cows that had been healthy the previous evening were discovered dead in their pasture. Of the remaining 51 cattle, only a handful ran up to the feed truck in their usual manner. Most of the animals were ataxic, walking with a weak, stumbling gait, frequently falling, and struggling to regain their feet. They also gazed in a “starry” manner off into the distance. Before long, more of them died. Calves were aborted or died soon after birth.

“Extensive testing for a wide variety of hepatotoxic agents by several different laboratories failed to detect any other possible explanation, and microcystin toxicosis was certainly consistent with clinical signs and lesions in the cows,” Raisbeck concludes.

“The onset of signs in this case was preceded by several days of unusually warm, windy weather which precipitated a sudden runoff that flooded the meadow, leaving many puddles of warm, stagnant water. Benthic mats that can store the toxin might have gotten loose and spread out and the animals ate it,” he adds.



The cracked hoof of a steer with a lesion caused by selenium poisoning is shown.

livestock

The toxicologist nailed one particular mystery in the Riverton area involving a feed contamination problem that had resulted in sickness in 100 of 200 purebred feeder lambs and in 10 to 12 animal deaths.

Raisbeck, a local veterinarian, and the owner suspected that powder or fines in the feed was the problem. In response, the state had an analysis conducted on the feed and concluded that the illnesses were definitely not feed associated. However, the analysis was narrow, focusing on just one compound.

The professor persuaded the owner to widen the search, and it was discovered that a related compound that had carried over from a previous batch of feed due to a failure in quality control had caused the illnesses and deaths. "If we'd gone with the initial test results, which were accurate but just not focused enough, we wouldn't have found the answer."

Raisbeck keeps a trove of information in his case files about selenium poisoning in livestock. "I started collecting field data in 1989 to see what the natural his-

tory of the disease was in the state," he says.

He donned his detective cap in the early 1990s when a producer inadvertently fed hay containing selenium to his horses. They began to lose their manes and tails, and their feet started to crack.

Raisbeck says his department is known for its experience and expertise in dealing with selenium and receives calls from other countries like Canada and Australia seeking help. Grant funds support the efforts. "Because selenium is a potential contaminant in strip mines, we also received funding to look at how toxic it is in the Powder River Basin," he adds.

The professor made several visits to southeast Idaho where horses pasturing near a strip mine had been poisoned. A spring running through the middle of a waste pile had caused the selenium to leach into the pasture. "Selenium can cause problems," Raisbeck says. "It's real enough."

Another toxic mystery took Raisbeck to the Red Desert area where cattle were grazing near fenced gas wells. "Cattle will drink



Salt crystallizes on the soil near a creek where cattle were found dead.

some of the most awful things if they have the opportunity," he notes. In this instance the animals picked up petroleum hydrocarbon poisoning.

"People need to be careful with their livestock around these places," Raisbeck says. The area was eventually cleaned and fences were rebuilt to keep the cows at bay.

Veterinary investigation has also led Raisbeck to cases of lead poisoning, pesticide poisoning in eagles and other raptors, and carbon monoxide poisoning in blackfoot ferrets.

"We are going to see more problems between the mineral industry and the livestock industry," he predicts. "However, the two **can** co-exist. To avoid pollution, everybody has to clean up after themselves."

Raisbeck is never sure what kind of unusual puzzle he may be asked to piece together next. "People make mistakes, accidents happen, and the animals are usually the innocent bystanders," he says.

"I think the message in potential toxicology cases is that every angle is worth checking and that persistence usually pays off."

Ranching neighbors enjoy stopping by

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

Folks in the Platte County area have been enjoying livestock and feeder tours since the 1920s.

Hundreds of them gather once a year in the dead of winter, blizzard or not, to see the ranches of neighbors and to chat about who's doing what and how it's going. Some come in strollers, others on canes.

"The tour is something people really look forward to. It's like a family outing," says one veteran. "We like to get together, to visit, and to be nosy. We go home with some good times and also some knowledge about new innovations in ranching and farming."

The University of Wyoming's Cooperative Extension Service in Wheatland makes it possible. Current CES Educator Dallas Mount and those who came before him organize the tours each year with help from a committee of bankers and community leaders.

There's always something unique awaiting the folks at each stop. The 2004



Visitors at the Key Bar Ranch outside of Glendo learn how a sagebrush control program is revitalizing old pastures.

trip offered a glimpse at three cattle operations along Horseshoe Creek west of Glendo in an area rich with natural beauty and history.

At the Key Bar Ranch, owned by the Jim and Nancy Ludvik family, conservation and enhancement of natural resources is a management priority.

Several major rangeland improvement projects are underway using an imprinter, a large rangeland aerator that is used in conjunction with inter-seeding improved grass species and with sagebrush control.

Visitors enjoyed poking at this modern machine that is helping to renovate old pastures to make way for grass and hearing about how the ranch promotes high-

quality genetics in its largely Limousin cow herd.

The caravan of dusty trucks and cars next followed Horseshoe Creek to the Wilson ranch and its gravity-operated irrigation system that is used to control two side-roll sprinklers covering a 70-acre meadow on the property.

The unique set-up is driven by a pipeline that carries water from Spring Creek down a canyon. The line runs in what was originally a ditch installed in 1939, and the Wilsons installed the pipe and a dam in 1978 to improve the system.

Thanks to a heated barn and warming rooms on the ranch, Britt Wilson jokes that "there are no more calves in the house."

An authentic narrow-gauge railroad car open to visitors features artifacts from Oregon Trail and Pony Express days. The Wilsons have assembled a museum of barbed wire samples, old photographs, furniture, a phonograph, dishes, a wood-burning cooking stove, tools, bottles, a cherry pitter, maps, an old-time crank phone, saddles, trunks, books, arrowheads, and a pair of 1867 scissors as a reminder of Wyoming's historic roots.

The last stop takes the curious deeper into the past at the Lancaster ranch, founded on the oldest build-



John Lancaster explains how he manages his alfalfa circles to participants in the 2004 Platte County Livestock Tour.

ing site in the Glendo area. The barn and house sit where a station once served Pony Express riders and travelers along the Oregon Trail.

John Lancaster manages alfalfa circles for maximum production by leaving out an intermediate crop when renovating alfalfa. After the alfalfa has served its useful life, usually five to seven years, he sprays and discs the stands after the second cutting and plants back to alfalfa the following spring. He has managed to maintain healthy stands of highly productive alfalfa without autotoxicity problems.

Lunch at Glendo School gives folks a chance to chat about what they've seen, to win door and guessing-game prizes, and to thank community donors for supporting the tour.

Wyoming State Veterinarian Jim Logan, no stranger to the crowd, offers an update on the outbreak of brucellosis in cattle in the greater Yellowstone area.

"We'll be back next year," the veteran participant says. "There's always something helpful to learn, and it's a treat to visit with the neighbors we are usually too busy to see."



Del Landen, left, was the Platte County CES agent from 1947 to 1975. He chats during the livestock tour with rancher Jim Wilson, right, one of his former 4-Hers.

Most everybody knows Del

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

Del Landen never misses a Platte County Livestock Tour.

Heck, he used to organize them during the 28 years he served as the Cooperative Extension Service agent in Wheatland.

He retired in 1975, and Platte County folks named their new CES building in honor of him in 1995.

Now 86, he remembers when he and a home economist were in charge of everything from identifying bugs to battling weeds to checking on livestock to teaching 4-H kids.

Like his neighbors, Del looks forward each year to learning what other ranchers are doing and to chat.

Most everybody knows Del. Jim Wilson and John Lancaster, hosts on this year's tour, were in his 4-H club. He has owned season tickets for University of Wyoming football games for 56 years and was named the "Greatest UW Football Fan" for 2003. The Wyoming Chapter of the National Football Foundation also named him the "Greatest High School Football Fan" for the year. Folks in Wheatland see him at every game.

"I'm here for every livestock tour, too," he says. "It's great to be with people I haven't seen for years and years and to learn new things. It's just plain fun."

Behind the seeds of Wyoming

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

A photo gallery in the College of Agriculture pays homage to its current and past deans, all white males.

Similar hanging tributes to outstanding alumni and donors bear the eyes of predominantly white males and some females, “but overall a collection of portraits that tend to support agricultural stereotypes,” according to Associate Dean Jim Wangberg, director of the Office of Academic and Student Programs.

The faces fail to tell the whole truth.

“The majority of University of Agriculture students are females, and the history of agriculture is rooted in diversity,” Wangberg says.

“It is important for women and minorities to see their images and historical accounts of their experiences in agriculture when they are in the UW agriculture building and its classrooms.”

He’s doing his best to make that happen.

A group of 12 students he has instructed this semester is just completing UW’s first ever “Agriculture: Rooted in Diversity” course. The culmination of their efforts will be the presentation and exhibition of museum-quality displays featuring oral histories, narratives, archival information, photographs, illustrations, and other embellishments that tell the quiet story of how women and minorities have helped to shape the state’s agricultural heritage.

The three-credit offering, which is cross-listed with African American, American Indian, Hispanic, American, and women’s studies as well as English, history, and family and consumer sciences, features its own diversity with an enrollment of graduate and undergraduate students from varied ancestries and majors.

“The nice thing about that diversity is that students come in with different backgrounds and expertise and look at some central questions from unique perspectives,” Wangberg says.

“Our dialogue and debate can be lively with provocative discoveries,” he adds. “That’s what a university is about.”

Funded by grants from the President’s Advisory Council on Minorities’ and Women’s Affairs, the Wyoming Council for the Humanities, and the UW American Heritage Center, the course first oriented students to research methodologies and resources available at the center and at university, state, and national libraries, archives, and museums.

“For some of the students, it is the first time they have been challenged to do this kind of independent work,” Wangberg says. “They have been a bit out of their comfort zone.”

Each class participant has been given a travel budget to conduct oral histories and to visit the places in Wyoming that still bear the legacy of the bond between minorities and the state’s agricultural roots.

The shadows in the fields of their research belong to German immigrants, Jewish farmers, African-American cowboys, Hispanic children, Hutterites, Japanese farmers in internment camps, Mexican shepherders, and Native American women.

Driving student Crystal Park’s research has been a set of photos of early range women. “Each one is unique in the way it supports the agrarian or western myth of what Americans think ranching and farming in the early 1900s looked like,” Park explains. She is earning a master’s degree in American studies and is using the pictures to illustrate information about the times.

Caren Speckner wanted to take the course because it is cross-listed with so many departments. “I’m an English major, but my background is in agriculture. It’s



agricultural history

nice to be taking a class that relates to both," she says.

"My granny is a German from Russia," Speckner says, noting that her Goshen County home area is rich with other such immigrants. Her project focuses on their contributions to the state's agricultural community. A senior from Torrington, she says she is also glad to be learning more about her own family background. "We enjoy Oktoberfest and cabbage burgers and the whole thing."

An agricultural business major, junior Barnett Sporkin-Morrison is interested in early Jewish farmers, who began arriving in Wyoming in the 1860s and were among the first people to populate Cheyenne. "There was even a Yiddish newspaper in Cheyenne at the turn of the century," he notes, adding that today there are only about 400 Jews living in the state.

A series of public lectures delivered by professors and historians has accompanied the course and added depth to the tales and hardships of Wyoming's agricultural past being discovered by the students. The titles



Students in the "Agriculture: Rooted in Diversity" course and visitors learn how to organize their projects into museum displays during a session at the UW American Heritage Center. At the front right is Associate Dean Jim Wangberg, instructor for the class.

have included "Sheep and Txistus: Basque Immigration in Northern Wyoming's Ranching Community," "Fertile Ground for Gender Analysis," "Agriculture and Latino Community Development," "Let Them Raise Chickens! African Americans on the Ranching Frontier," "American Indian Land and Uses," and "Daikon, Watermelon, and Peanuts in Park County."

Wangberg hopes for more. He sees "Agriculture: Rooted in Diversity" and the historical exhibits being borne out of it as a seed that could grow into a state and nationwide project engaging historically black U.S. colleges and universities, tribal colleges, community colleges, and Hispanic-serving institutions. He envisions traveling student displays, the creation of archives, and the publication of a national

collection of photos and findings.

He is awaiting word on a \$280,000 competitive U.S. Department of Agriculture Higher Education Challenge Grant that would make it possible.

To the halls of the University of Wyoming's College of Agriculture and those of other similar institutions, Wangberg wants to add "the other faces" that belong.

Partnering in extension

by Vicki Hamende,
Senior Editor

*Office of Communications
and Technology*

The “extension” aspect of a research and extension center’s role means sharing knowledge and also extending the search for knowledge.

Partnerships with ranchers, farmers, and business owners can provide unique classrooms for inves-



Mark Guyer works with the Sheridan station to experiment with different grasses and plants in his commercial lawn care business.

tigating agricultural whodunits.

Producer Doug Greenough of rural Sheridan lends a small plot of pasture infested with cheatgrass (downy brome) to the University of Wyoming’s Sheridan Research and Extension Center for herbicide experimentation.

“It’s a nasty little grass. If we get a cold, dry spring it will come up before anything else will,” Greenough says. “The cattle don’t like it. It has real short barbs on it, and it gets in their eyes. It’s not palatable at all after it goes to seed.”

Greenough, who grows hay and oats, said a quick “yes” to Roger Hybner, director of the Sheridan center, when asked if he would collaborate with studies aimed at better controlling cheatgrass.

“If there’s any way I can help with their experiments, I’m more than willing to do so. Anytime I have questions, Roger is always good about helping me out,” Greenough says.

Different kinds of herbicides, particularly types used early in the spring before desirable plants begin

“I am always interested in what they are doing at the Sheridan station. A lot of their studies are helpful to us locally.”

Doug Greenough

to grow, are being tested on his property. “Cheatgrass is hard to kill because it’s not broadleaf,” he notes.

“This crazy stuff is tough. It would be real beneficial if we could find out a way to spray to get rid of it,” he adds.

Greenough says he and his wife run a “ma and pa operation” with an 800-acre hay base near Prairie Dog and Cat creeks and another 2,000 acres on Buffalo Creek where they summer 100 cows.

He grew up on a ranch and remembers calling farmers “dirt scratchers.” Now Greenough has changed his tune. “I enjoy it. It’s a good life,” he says.

“I am always interested in what they are doing at

the Sheridan station. A lot of their studies are helpful to us locally,” Greenough says. “I’m glad to be involved.”

Mark Guyer is also a research and extension collaborator but one with a more urban slant.

The owner of Lawn Pro in Sheridan, Guyer specializes in lawn and tree fertilization and weed control in residential areas and construction sites. He also uses different types of turf grass and plants in his business that are grown at the center and at land lab Hybner maintains at Sheridan College.

“I’ve known Roger for a long time, and when I have problems with trees and don’t know their insects I get ahold of him and he comes to the site to diagnose them for me,” Guyer says.

“We’ve talked about all of the turf grass plots he has planted and the buffalo grass he has at the extension center. We’ve been working together off and on for the past 10 years.”

Guyer, who also runs the meat department at Warehouse Market, says he enjoys visiting the Sheridan station. “I like looking at

Faculty awards say “thank you”

“Those having torches will pass them on to others.” — Plato

Outstanding College of Agriculture faculty members are thanked each year for passing their torches to students through teaching and advising.

Some of the recognition is accompanied by national and university monetary awards. Financial support from donors and from the offices of the dean and academic and student programs provides funds for some specific College of Agriculture honors.

The National Association of State Universities and Land-Grant Colleges gives national awards for excellence in teaching. For the western region, Professor Larry Held of the Department of Agricultural and Applied Economics and Professor Jeff Lockwood of the Department of Renewable Resources each received the honor, which now includes a \$2,000 prize.

John P. Ellbogen Meritorious Classroom Teaching Awards and \$3,000 are given each year by the University of Wyoming’s Office of Academic Affairs to top classroom educators. Current College of Agriculture faculty members who have been winners in recent years include Held, Professor Bill Murdoch of animal science, Lockwood and Professor Larry Munn of renewable resources, and Associate Professor Donna Brown of family and consumer sciences.

The College of Agriculture dean’s office awards \$500 gifts to outstanding educators. Current faculty members who have been honored in recent years include Murdoch and Associate Professor Warrie Means of animal science and Professor Rich Olson and Associate Professor David Legg of renewable resources.

The Agriculture Student Council honors faculty members with \$500 for Lawrence Meeboer outstanding teaching awards and also outstanding advising awards.

Current faculty members who have won the Lawrence Meeboer prizes include Olson, Munn, Associate Professor K. J. Reddy, and Professor Quentin Skinner of renewable resources; Held, Professor Dale Menkhaus, and Associate Professor Alan Schroeder of agricultural and applied economics; Professor Beth Williams of veterinary sciences; Associate Professor Shane Broughton of family and consumer sciences; Professor Dan Rule and Associate Professor Karen Hansen of animal science; and Professor Dale Isaak of microbiology and molecular biology.

Named outstanding advisers from the current faculty have been Means, Professor/Department Head Doug Hixon, Professor Gary Moss, and Rule of animal science; Professor Ken Mills and Professor Lee Belden of veterinary sciences; and Brown, Associate Professor Rhoda Schantz, and Associate Professor Karen Williams of family and consumer sciences.

the different research going. Roger has a vast amount of knowledge to share, and I’m glad that I can help him out, too,” Guyer says.

For his part, Hybner says having partners like Greenough, Guyer, and other producers throughout the Sheridan region means that research can extend far beyond the boundaries of the University of Wyoming.



Doug Greenough pulls some of the cheatgrass growing in an experimental plot on his property. He is collaborating with the Sheridan Research and Extension Center to search for herbicides to control the plant pest.

Brown bananas and mystery gum

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

The blindfolds were securely tied around the heads of the edgy participants. The specimens glistened in their sugary coatings, neatly assembled on paper plates: orange, green, yellow, white, red, and purple.

It was time for the gumdrop games.



During a gumdrop tasting activity, blindfolded 4-H leaders attempted to assign flavors to candies of different colors.

Nervously, each taste tester puckered up and popped in an orange one. Cloves? Cinnamon? What **did** it taste like? A cracker later, it was time to tackle the green entry. “Spearmint” was the consensus.

“They’re all minty to me,” giggled one. The yellow piece? “Spicy,” announced another. “Tastes like shoe leather,” maintained a third voice. Guffaws all around.

The purple gumdrops were quickly anointed as licorice. After another cracker break, cinnamon took over the red spot. White? An “icky” peppermint. “It’s like sulphur,” one insisted. “I’m sticking with sulphur.” More chortles.

Blindfolds removed, the gumdrop brigade quickly devoured the remaining evidence, earnestly digging the sticky leftovers out of their teeth to be chewed anew.

The lesson? Color and smell may give one impression of a food, but tasting it tells the full-flavored story.

“Fun with Food Science” means having fun with treats like gumdrops and also learning about the properties of food, what



How to keep the brown out of cut banana pieces was the focus of another “Fun with Food Science” project taught to 4-H volunteers at a regional workshop in Alaska.

constitutes healthy eating, and what careers are available in the food field.

4-H volunteers attending the 2004 Western Regional Leaders Forum in Anchorage, Alaska, heard all about it in a workshop led by Washakie County’s Phyllis Lewis and Sweetwater County’s Nina Romero-Caron of the University of Wyoming Cooperative Extension Service.

The two presented a variety of activities designed to provide giggles as well as nutrition education to 4-H youths of all ages. Judging by the reaction of the adults from 13 western states, four American territories, and

two Canadian provinces, 4-H kids are in for an adventure.

In the “No More Brown Bananas” exercise, Lewis and Romero-Caron led the leaders in an experiment designed to demonstrate how cut bananas can be best preserved and protected from oxidation. The color and flavor of bananas soaked in ascorbic acid, vinegar, lemon juice, and water as well as left dry on a plate and wrapped in a bag were compared at five-minute intervals for 20 minutes.

At each “banana check” fruit lovers discovered that

“Fun with Food Science” means having fun with treats like gumdrops and also learning about the properties of food, what constitutes healthy eating, and what careers are available in the food field.

drops equal 4-H fun

the flavor changed the least and enzymatic browning was avoided by coating the slices with an acid mixture like lemon juice. The College of Agriculture educators reported that juices such as orange and pineapple also worked well and that the project could be applied to apples, pears, peaches, eggplants, or avocados.

To the fun of watching and tasting pieces of bananas, they suggested adding a culminating activity like having 4-H members assemble and eat a large fruit salad coated lightly in juice.

In another activity, youths can be encouraged to “rethink” what they drink by studying the health implications of foregoing fat-free milk for beverages like fruit punch and pop. Breaking down the individual ingredients in root beer so that 4-Hers can actually visualize the amount of sugar in an individual serving of the pop is one way to grab the attention of youngsters in the fast-food generation, the 4-H educators noted.

A lesson examining the most effective way to cook popcorn can show students



Mixing their own root beer to demonstrate to 4-H leaders attending workshops in Alaska the high sugar content of the beverage are CES educators Phyllis Lewis (standing left) of Washakie County and Nina Romero-Caron (standing right) of Sweetwater County.

how to make popcorn-laced trail mix and colored popcorn and can offer a tasty conclusion for a youth activity.

Also in the Lewis/Romero-Caron repertoire of “Fun with Food Science” projects were ways to use dried foods to make “home-made lava lamps” for unique centerpieces.

In exercises called “Science in Your Shopping Cart,” youths can learn how the U.S. Department of Agriculture’s Agricultural Research Service uses farm products to try to improve the country’s nutritional

intake and how genetically altered foodstuffs can lead to choices like “burpless” cucumbers, seedless fruits and vegetables, purple potatoes, and even green and yellow ketchup.

No instruction in food science, the instructors told the participants in the session, would be complete without using the food pyramid to help plan family menus that pay attention to nutritional strength and variety as well as texture and taste.

How much will 4-Hers remember about healthy eating when they become

adults responsible for passing nutritional tips on to their own children? Perhaps having fun while they learn will help the lessons last longer, Lewis said.

As an example, she told the group about the time she was flabbergasted but delighted at what happened when she went out to dinner with one of her grown sons. As his meal was served, he carefully studied his plate and then questioned aloud, “So where’s the color and crunch in this?” Obviously he had been trained to relish “Fun with Food Science.”

PROGRAM NOTES



Ag and Applied Economics

Associate Professor Ed Bradley says he has enjoyed his tenure as leader of the Department of Agricultural and Applied Economics but is looking forward to rejoining the faculty to concentrate on teaching and research.

Named the department head in the fall of 1997, Bradley is stepping down and a replacement is being sought. "It's important for a department to have regular changes in leadership," he says.

Bradley is proud of the fact that the department "has stayed focused on quality undergraduate and master's level education" throughout his appointment and notes that the unit has produced 40 to 50 graduates each year.

"We were also able to hire good people and to advance our junior faculty members," Bradley says. "We have been able to maintain a healthy unit culture that's built on trust and collegiality, never an easy matter."

He hopes to strengthen instructional programs and to help promote the national visibility and grantsmanship of his unit by doing more teaching and research.

Meanwhile, he says he is confident that the new leader of the department will be coming into a positive situation.

"I'm real happy with the strength of the department. We have a solid core of productive people who work well together," Bradley says. "We provide good service to students, to the state, and to society in general with our teaching, research, and extension programs."



Animal Science

The 26 members of the University of Wyoming Intercollegiate Horse Show Association and Team (IHSA) have completed a competitive 2003-2004 season.

UW has been active in Zone 7, Region 1 of the IHSA for more than 10 years. Students compete in hunt and stock seat events against college teams from

Colorado, New Mexico, Kansas, and Nebraska.

Horses and tack are provided by the host colleges. Students randomly draw for the horses they ride in competition and are judged strictly on equitation skills.

During the fall season, the riders competed at the University of Colorado, Laramie County Community College, and twice at Colorado State University.

Spring events took place at New Mexico State University, the University of Denver, and also at Colorado State University.

At press time, the following team members had qualified for regional competition at Colorado State University: Britney Burt and Bobbi Edwards (beginning stock seat), Jennifer Walters, Jennifer Young, and Kirsta VonderHaar (intermediate stock seat), Amy Goodson (advanced stock seat), and Michelle Schwope (alumni reining). Amy Goodson qualified for advanced walk, trot, and canter in the hunt seat division, and Stephanie Hansen qualified in the novice hunt seat category.

The top three finishers from each class during regional contests are eligible

to participate in zone competition at West Texas A & M University in Canyon. The nationals take place in May at Middle Tennessee State University in Murfreesboro.

The UW team is coached by Associate Professor Karen Hansen of the Department of Animal Science.



Family and Consumer Sciences

The 2004 University of Wyoming Consumer Issues Conference will focus on consumer activism related to health decisions. The fifth annual event is slated for Oct. 7 at the Wyoming Union.

The purpose of the conference is to develop an understanding of consumer health issues and resources available to tackle them. The gathering is also geared toward empowering consumers to seek solutions to health concerns through education, collaboration, and participation in the public policy process.

Students will be involved in researching health issues important to consum-

ers and will present papers at the conference. Another goal of the event is to provide opportunities for networking among interested parties with different perspectives on consumer health issues.

Credits will be available for continuing legal education, American Association of Family and Consumer Sciences professional development, and for Professional Teaching Standards Board requirements.

Information about the agenda, speakers, exhibitors, and registration is still being organized and will be available at the Web site www.uwyo.edu/consumer conference. Further information can be obtained by contacting UW FCS Professor Virginia Vincenti at vincenti@uwyo.edu or (307) 766-4079.



Molecular Biology

Associate Professor Elizabeth Sockett, a “senior reader” in genetics at the University of Nottingham in Great Britain, spent several weeks in the molecular biology department learning DNA microarray techniques used in Assistant Professor Mark Gomelsky’s laboratory and conducting collaborative experiments.

In return, Sockett taught techniques for studying bacterial motility and taxis to those working in Gomelsky’s lab. She also gave a lecture on “Eat and Run: Genetics of the Fast-Moving Bacterial Predator *Bdellovibrio Bacteriovorus*” as part of a series of molecular biology seminars.

Gomelsky has identified a novel class of photoreceptor proteins in *Rhodobacter*, a bacterium that has unmatched metabolic capabilities. “People in the photoreception field are excited about these new photoreceptors. However, we don’t yet know what their functions are. One possibility is that they are involved in phototaxis (directed movement toward or away from light). Liz helped us test this possibility,” Gomelsky says.

The two know each other because they shared a postdoctoral adviser. “The *Rhodobacter* community keeps in touch,” he says. “The visit was mutually beneficial.”



Plant Sciences

Faculty and staff members in the Department of Plant Sciences wish to express their appreciation to Office Assistant Senior Katherine Keeney for her

continued service to them and to students.

Keeney joined the department 29 years ago and was the first recipient of the College of Agriculture’s Outstanding Staff Award in 1988.

“Katherine has been the major contributor to the joys I have experienced in my 32-year career at the University of Wyoming,” says Professor Ron Delaney, department head.

“She is just outstanding. She’s the most pleasant, diplomatic, efficient person we could ever have. She’s the very best in the world, an excellent person and staff member,” says Professor Fred Gray.

“She shows absolute reliability and is very thorough. She has been just great,” notes Bill Stump, temporary research scientist.

“Katherine is the best person to work with. She’s honest, reliable, and just does anything and everything for you. Anybody can talk to her,” says Norma Murphy, accounting associate.

“Kathy is one of the special treasures that makes this department so wonderful. Being the youngest member of the department, I am always touched that Kathy looks out for me and is always very encouraging of all my efforts. She makes

me feel like ‘one of the family.’ She works hard, is very efficient, and always has kind and supportive things to say. I cannot praise Kathy enough for her gentle spirit and loving heart,” says Raina Spence, assistant research scientist.

“She’s my favorite. She can anticipate what you need before you even need it. You go in to ask her about ‘A’ and she will follow up on ‘B,’ ‘C,’ and ‘D’ and come up with things you never thought of,” says Jeff Flake, research associate.

“She’s pleasant and easy to work with and is very supportive. She consistently gets things done sooner than I expect them. She’s always on time if not ahead of schedule. She has bailed me out of more than one bind. We would be sunk without her. If she leaves, the rest of us are leaving,” says Dave Claypool, research associate.

Delaney points out that Keeney, the department’s “cornerpost,” resigned briefly in 1976 and again in 1982. “She obviously soon realized each time that the department’s wiring was falling apart in her absence, and she quickly returned, Delaney says. “She spoiled us with a quality of work that didn’t allow her successors to succeed.”

PROGRAM NOTES



Renewable Resources

College of Agriculture students returned to Laramie with two first place finishes and the top sweepstakes award in undergraduate competition at the 57th International Society for Range Management (SRM) gathering in Salt Lake City, Utah.

Senior Jordge Lafantasie, a rangeland ecology and watershed management major from Castle Rock, Colorado, won first place in the undergraduate range management exam (URME), defeating 174 other students from throughout North America.

Lafantasie's combined scores on the URME test and the plant identification contest qualify her as the sweepstakes winner and entitle her to two trips to Washington, D.C., to meet with federal officials representing the U.S. Forest Service, the Bureau of Land Management, and the National Resources Conservation Service.

The UW URME team as a whole finished in second place out of 18 teams, scoring just behind the University of Alberta.

Senior Rachel Shorma of Rock Springs won first place out of 24 students in the range speaking contest for her talk on the inhibition of growth in one species of plants by chemicals produced by another species.

In addition to participating in the contests, Lafantasie also presented a paper to attendees at the international SRM meeting on "Vegetation Changes with the Release of Coalbed Methane Discharge." Although she will not complete her undergraduate degree until May 2004, she has already begun research on this topic for her master's work.



Veterinary Sciences

Professor Donal O'Toole, head of the Department of Veterinary Sciences and the vice president and future president of the American Association of Veterinary Laboratory Diagnosticians, had the opportu-

nity to meet with U.S. Secretary of Agriculture Ann Veneman in Washington, D.C., as part of a U.S. Animal Health Association Government Relations Committee gathering.

Discussion items included the implementation of a national animal identification system in the wake of the discovery of a Canadian cow with bovine spongiform encephalopathy ("mad cow" disease) on a farm in Washington.

O'Toole and his colleagues also toured the Emergency Operations Center of the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, received Agriculture Research Service updates, and met with representatives of the International Association of Fish and Wildlife Agencies, the American Veterinary Medical Association, the American Association of Veterinary Colleges, the Animal Agriculture Coalition, the Homeland Security Council, the Food Safety and Inspection Service, the U.S. Food and Drug Administration Center for Veterinary Medicine, and the Cooperative State Research, Education, and Extension Service.

The group also received updates about national animal health programs pertaining to BSE, tuberculosis, brucellosis, pseudorabies, scrapie, chronic wasting disease, Johne's disease, and exotic Newcastle disease.



Academic Programs

Associate Dean Jim Wangberg, director of the Office of Academic and Student Programs, has been selected to present a paper about the "Agriculture: Rooted in Diversity" multi-grant-funded project at the 29th annual International Conference on Improving University Teaching July 12-15 at Bern University in Switzerland.

The conference offers the opportunity for participants from around the globe to share practices, discoveries, and challenges dealing with improving the effectiveness of postsecondary teaching and learning.

Wangberg will describe the three-credit, multidisciplinary course, first offered during the

spring semester, that allows students to research a topic related to the experiences of women and minorities in agriculture. The project also includes public guest lectures by university and outside speakers.

Students are preparing and presenting museum-quality exhibits featuring narratives and historic photos about their research as a culminating activity.

Wangberg hopes to expand the project nationwide by engaging a variety of multi-cultural institutions and to publish a book based on student findings.

The theme of the international conference is "Optimal Teaching and Learning: Achieving Higher Education Excellence," and its goal is "to stimulate vigorous conversations that will produce practical solutions in relation to pedagogy, faculty training, and other aspects of university life."



Cooperative Extension Service

Three new educators have joined the College of Agriculture's Cooperative Extension Service in Uinta, Campbell, and Laramie counties.

Jaime Burton, a native of Evanston, has been hired

to work in community development in Uinta County with the Enhancing Wyoming Communities and Households (EWCH) state initiative team.

Burton has been focusing on family finance, meeting with elderly women to discuss financial protection and with high school students to discuss the difference between "needs" and "wants." She is also surveying communities to assess interest in developing a leadership program.

She has a bachelor's degree in accounting from Utah State University and a master's in business administration from the University of Utah.

Daun Martin, a new educator for 4-H and family resource management through EWCH, is based in Campbell County and will also help serve Crook and Weston counties.

Martin has developed a newspaper column on financial issues and is also teaching a class in financial management at an alternative high school. She is planning programs for adults on family financial management and will be promoting family and consumer sciences projects.

A native of San Diego, California, Martin has a bachelor's degree in foods and nutrition and a master's

degree in family studies from San Diego State University. She also has a master's degree in counseling psychology and a doctorate in educational psychology from Washington State University. Martin has done post-doctoral work in the areas of special education and chemical dependency.

Laramie County's new 4-H program associate, C.J. McCabe, is a native of Cheyenne who received a bachelor's degree in animal science from Colorado State University.

So far he has been working on livestock and enrollment activities and has taken on coaching duties for the meats judging team.



Agricultural Experiment Station

Personnel from the College of Agriculture's four research and extension (R&E) centers traveled to the University of Wyoming in the winter for their annual campus visit.

The planning meeting allowed Laramie researchers to meet with center colleagues to discuss collaborative projects and ideas for the future.

In addition to finalizing plans for next summer's re-

search projects at the centers, the R&E team members listened to talks about biotechnology, organic farming, WIN the Rockies, and resources available to producers through the Wyoming Geographic Information Science Center.

They also toured and witnessed current research projects at the animal science livestock facility and visited the hands-on classrooms and research programs of family and consumer sciences. In addition to learning about issues and hearing what is happening in various college departments, they also presented information outlining research activities and facilities at the centers in Powell, Sheridan, Archer, and Torrington.

College of Agriculture representatives will soon be traveling to the four stations to work on projects. The Torrington R&E Center will host an open house on June 10, there will be a tour of the new SAREC facility on June 25, and the Sheridan R&E Center will conduct a grape-pruning workshop on October 30. Watch for additional events and dates and stop by to see research projects in action.

PROGRAM NOTES



Ag Development

Remembering and honoring teachers who made a difference is something many alumni do in the form of College of Agriculture scholarships named for faculty members. Such gestures allow new students to benefit from the legacy

left by those who have educated students in the past.

Among the former faculty members whose names bear scholarships are O.A. Beath, Alan "Doc" Beetle, Margaret Boyd, Herbert Fisser, Alvin Gale, John Hill, N.W. Hilston, Verna Hitchcock, W. Gordon Kearl, Leroy Maki, R.J. McColloch, Lee Painter, William Riedl, Paul

Stratton, Andy Vanvig, A.F. Vass, G.H. Bridgmon, Ken Bohnenblust, Bernie Kolp, and Marion Yule.

To create a scholarship in the name of a remembered teacher or to contribute to an existing scholarship, contact Anne Leonard, director of development and college relations, at aleonard@uwyo.edu or (307) 766-3078.



Aggies, Outlaws, and Lawmen to meet

The second reunion of "Aggies, Outlaws, and Lawmen" who worked at the Wyoming Territorial Park, formerly the University of Wyoming Stock Farm, from the early 1900s through 1990 will take place Aug. 13-15 at the park.



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