UW COLLEGE OF AGRICULTURE

AG NEWS

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"Leadership is the art of getting someone else to do something you want done because he/she wants to do it."

Dwight Eisenhower

Dear Friends and Colleagues,

Winter has arrived in Wyoming. We hope the season brings moisture to the high country as well as the range. It was great to see many of you at the Wyoming Natural Resource Conference in Casper in early December. Thanks to all of you who attended a listening session held by this college on the Monday during the meeting. This session helped us kick off the next cycle of academic planning.

The University of Wyoming revises its academic plan every five years. The strategic document guides the institution's priorities. We plan to identify items to address this spring and then draft a plan in the summer and fall of 2008. The plan must be submitted to the UW Board of Trustees in spring 2009.

Dean Frank Galey

Being the land-grant college in a land-grant university, it is appropriate the College of Agriculture visit with our constituents as we plan. This allows us to address items important in the state and allows us to know we have your support. As part of the process, a series of documents outlining items to address will be drafted for comment. They will be available on our Web home page http://uwadmnweb.uwyo.edu/UWAG/. You are invited to watch for these documents. The initial one is set to appear shortly after the first of the year. Please send comments to me by e-mail, or watch for our listening sessions. These sessions are planned as a series of town hall-style "meet the dean" meetings around the state. We will communicate the times and locations of those sessions locally, and they will be posted on our Web home page.

The earliest of these sessions was the one at the natural resources convention. Thanks again to those of you who attended.

Inside, you will find stories about research into the die-off of bighorn sheep at Whiskey Mountain in northwestern Wyoming. The newly organized Wyoming Reclamation and Restoration Center is presented as well. Other activities mentioned include a new Cent$ible Nutrition Program cookbook, new ways to understand watersheds, activities in our interior design class, and an update on the Brand of Excellence Scholarship Banquet.

I hope you all had a happy holiday. Thank you for your continued support of your college! We can be contacted at (307) 766-4133 or agrdean@uwyo.edu. Our Web site is http://uwadmnweb.uwyo.edu/UWAG/.

Frank

Dean Frank Galey
College of Agriculture

UNIVERSITY OF WYOMING

Nine ag college faculty members named 'Top Profs'

by Robert Waggener, Editor
Office of Communications and Technology

Nine College of Agriculture faculty members were among 34 faculty members campus-wide receiving "Top Prof" recognition for 2007 by the UW Cap & Gown Chapter of Mortar Board.

Ceremonies were October 29 at the home of UW President Tom Buchanan and his wife, Jacque.

"Thirty-four Mortar Board members recognized their 'Top Profs' with gracious speeches and many thanks," says one of the members who helped organize the event, Abbey Garber of Big Horn, who is majoring in accounting.

The following College of Agriculture faculty members were honored (with the Mortar Board member, major, and hometown in parenthesis):

Animal science – Professor Doug Hixon (Stacia Berry, animal and veterinary sciences, Cheyenne); Professor Dan Rule (Katherine Kessler, animal science, Lander); Assistant Professor Kristi Cammack (Micki Paris, animal and veterinary sciences, Marsland, Nebraska); Associate Professor Warrie Means (Justin Uhrig, animal and veterinary sciences, Minatare, Nebraska).

Family and consumer sciences – Associate Professor Rhoda Schantz (Camden Mason, dietetics, Cheyenne).

Molecular biology – Associate Professor Pamela Langer (Kristen Horner, microbiology, Big Horn); Assistant Lecturer Rachel Watson (Christopher Schultz, chemical engineering, Sheridan).

Plant sciences – Senior Lecturer Dave Wilson (Jerod Smith, agroecology, Meeker, Colorado).

Renewable resources – Professor Steve Williams (Battuya Bayarmagnai, molecular biology, Ulaanbaatar, Mongolia).

The faculty members received framed recognition certificates and attaché bags bearing the title "Top Prof 2007."

Donna Brown, a professor in the Department of Family and Consumer Sciences, is one of the Mortar Board advisers on campus.

Mortar Board is a national honor society that recognizes college seniors for excellence in scholarship, leadership, and service.


Doug Hixon


Dan Rule


Kristi Cammack


Warrie Means


Rhoda Schantz


Pamela Langer


Rachel Watson


Dave Wilson


Steve Williams

T I N G

College of Agriculture academic home for new B.A.S. degree program

by Robert Waggener, Editor
Office of Communications and Technology, And UW Media Relations

The College of Agriculture is the academic home for the new bachelor of applied science (B.A.S.) degree program, which is designed to provide a path to additional career opportunities for the Wyoming workforce.

Those with an associate of applied science (A.A.S.) degree from Wyoming's community colleges and two years of work experience can enroll in the B.A.S. degree program through the College of Agriculture.

"Community and economic development efforts have traditionally been major components of our land-grant mission, and the opportunity to help individuals acquire additional job training and skills is part of that mission," says College of Agriculture Dean Frank Galey.

The degree was approved in January 2007 by the University of Wyoming's Board of Trustees, and it was publicly announced October 23 during a ceremony at the UW Outreach School in Casper.

The B.A.S. degree was developed through extensive collaboration among UW, Wyoming community college faculty members and administrators, and the Wyoming Community College Commission.

"The community colleges saw the need for this kind of program. They contacted UW, and UW responded," says Laurie Bonini of the College of Agriculture's Office of Academic and Student Programs.

Bonini says the program is designed to help many in the workforce enhance their career capabilities and potential.

Laurie Bonini

Examples are those who earn A.A.S. degrees and who have two years of work experience in such fields as welding, agricultural business or science, drafting, computer Web design and Internet business, computer networking administration, commercial driving, horticulture, golf and sports turf management, nursing, and dental hygiene, and such technology fields as construction, diesel mechanics, engineering, machine tool, survey, and pharmacy.

"Students in the program will receive a B.A.S. in organizational leadership. They'll be focusing on writing, public speaking, and problem solving, as well as exploring issues relevant to the environment and society in which they operate," Bonini says.

A student must complete the general education requirements expected of all UW bachelor's degrees and must engage in upper-division coursework sufficient to provide focus and depth of learning.

The B.A.S. degree has four basic components: university studies, career specialty, professional concentration, and electives. All UW coursework for the B.A.S. degree will be delivered through distance technologies by the UW Outreach School to support students at the seven community colleges. Details about the degree qualifications and requirements can be found at http://outreach.uwyo.edu/ocp/bas.asp.

Persons interested in learning more about the program or enrolling may contact Bonini at (307) 766-4034, or e-mail her at lbonini@uwyo.edu.

The bachelor of applied science degree program is designed to help many people in the workforce to enhance their career capabilities and potential.

A bighorn sheep ewe and lamb from the Whiskey Mountain herd eat mineralized soil at a natural mineral lick. UW Professor Steve Williams and wildlife consultant John Mionczynski hypothesize the wild sheep ingest inadequate levels of selenium in years of high moisture, and this may contribute to high lamb mortality. (Photo courtesy Steve Williams)

Whiskey Mountain bighorn sheep

by Robert Waggener, Editor
Office of Communications and Technology

Shoulder muscles ripple as a young bighorn sheep ram crosses a high alpine meadow in northwestern Wyoming's rugged Wind River Range. He nibbles on grass, cautiously looks at his surroundings, and nibbles some more. The click of hooves meeting reddish, granite boulders mix with the soothing sounds of ice-cold water trickling through rocks below.

The ram still looks ragged in mid-August as the final chunks of coarse, old hair are about to fall from his brown coat. Nearby, a sun-bleached skull lies covered in lichen. Is the skull from one of the many bighorns that have mysteriously died since the early 1990s? No one knows for sure, but a research team of College of Agriculture faculty members and students, along with others, is trying to find out what has been killing an unusually high number of bighorns – notably lambs – in the Whiskey Mountain herd south of Dubois.

The research has led to theories, questions, debates, more questions followed by more debates, and mind-numbing frustration – but, as of yet, no definitive answers.

"Yes, it has grown frustrating. Sometimes I wonder if we can pull this out of that middle, gray area. Each time we try to answer a question, we raise 50 more," says Steve Williams, a professor in the Department of Renewable Resources. "My obligation as a professional scientist is to be a professional doubter. We have sifted through a mass of observations and from them derived a hypothesis, and now we're trying to either lend credibility to the hypothesis or discard it."

Some in the Wyoming Game and Fish Department (G&F) who were involved early in the research have discounted or already given up on the hypothesis being tested by Williams and colleague John Mionczynski, a wildlife consultant from Atlantic City, Wyoming. But Mionczynski and Williams – the M-W team – believe it's onto something, and that something has to do with the trace element selenium.

Like humans and many wildlife species, bighorns need selenium in their diets to maintain strong muscles, proper thyroid function, and healthy immune systems. At high levels, selenium can be toxic, even fatal; however, if the animals don't consume enough, their health deteriorates. This, according to the M-W team, may especially hold true for young lambs nursing milk too low in selenium. The quickly growing muscles use up the element faster than what can be replenished to maintain healthy bodies – bodies that can endure brutal winters and prolonged drought, bodies that can dodge attacks by mountain

die-off — hypotheses and doubts

lions and coyotes, bodies that can survive a host of parasites and illnesses.

Is selenium deficiency indeed contributing to the die-offs? If so, what has changed in the fragile alpine environment? Are global warming and acid rain among the culprits? Were sheep numbers allowed to grow so high they outgrew their carrying capacity – and caused long-term habitat damage in the process? Do years of fire suppression – and subsequent habitat changes – come into play? Are coyotes and mountain lions taking a toll? What about G&F hunting policy, which prohibits the taking of ewes? Is that leading to an unbalanced population?

The Whiskey Mountain unit peaked at nearly 2,000 animals in the 1980s, which, at that time, was the largest herd in the lower-48. "Things were going real rosy," says the G&F's district wildlife management coordinator in Lander, Tom Ryder (B.S.'80, wildlife conservation and management, and M.S.'83, zoology and physiology, both from UW).

During the Whiskey glory years, approximately 100 hunting licenses for rams were available annually and about 120 animals were being live-trapped each year and transplanted to other sites in Wyoming and across the western United States and Canada.

In the winter of 1990-91, a major die-off occurred following several weeks of bitter cold. More than 600 sheep were lost, but state and federal wildlife managers weren't overly alarmed because they believed the population would rebound in a couple of years.

But that didn't happen, says Ryder, who emphasizes "By 1995, it became obvious something else was going on, and that something wasn't good."

Over a several-year period, the population plummeted from nearly 2,000 to below 600 as the survival of lambs was essentially cut in half. Transplants from Whiskey stopped, and the number of hunting licenses was slashed to 20.

The G&F contracted with Mionczynski in 1998 to help find answers. The wildlife researcher had gained a reputation for his ability to live amongst wild animals, including bighorn sheep and mountain goats, for extended periods and to collect data that depends on getting feet – not yards – from the animals. "You never walk straight toward them. You slowly approach them from an angle, acting like you're grazing," says Mionczynski, making things sound easy.

Mionczynski, loaded down with a back-breaking pack filled with research equipment, food, shelter, and other supplies, left a trailhead south of Dubois near the Whiskey Mountain winter range and ascended some 4,000 feet to a high plateau in the Fitzpatrick Wilderness called Middle Mountain. With an elevation inching on 12,000 feet, the isolated mountain is where many of the Whiskey ewes raise their young.

Like many of his other trips to study critters in the western United States and Canada, Mionczynski's summer proved enjoyable as he became an extended family member of the wild sheep. He continually got close enough to the animals to observe what plants they grazed and even what plant parts they preferred.

Soon, his work turned horrifying. Mionczynski started observing lambs that couldn't walk, the same lambs that, just days before, were displaying frisky, playful lamb behavior. "Many of them couldn't even stand. Their mothers were screaming at them to get up, but they couldn't," he recalls. "It was very noisy as the mothers screamed at their lambs."

Many of the ewes wore neck collars and some had radio collars, which allowed Mionczynski to document about 35 lambs suffering from an unknown muscular disorder. "Then something happened that was completely perplexing. Mothers would disappear and return a day or two later. Within a couple of hours, their lambs would be up, walking around, showing no signs of illness," he says.

No answers … but more questions. Where were the ewes going when they left their sick lambs? Why, upon the return of their mothers, would the debilitated babies recover so quickly? These were among the few lambs that survived attacks that summer by mountain lions and coyotes, which quickly learned Middle Mountain was the place to find an easy supper.

Mionczynski collaborated with Pat Hnilicka, then a G&F wildlife biologist who now works with the U.S. Fish and

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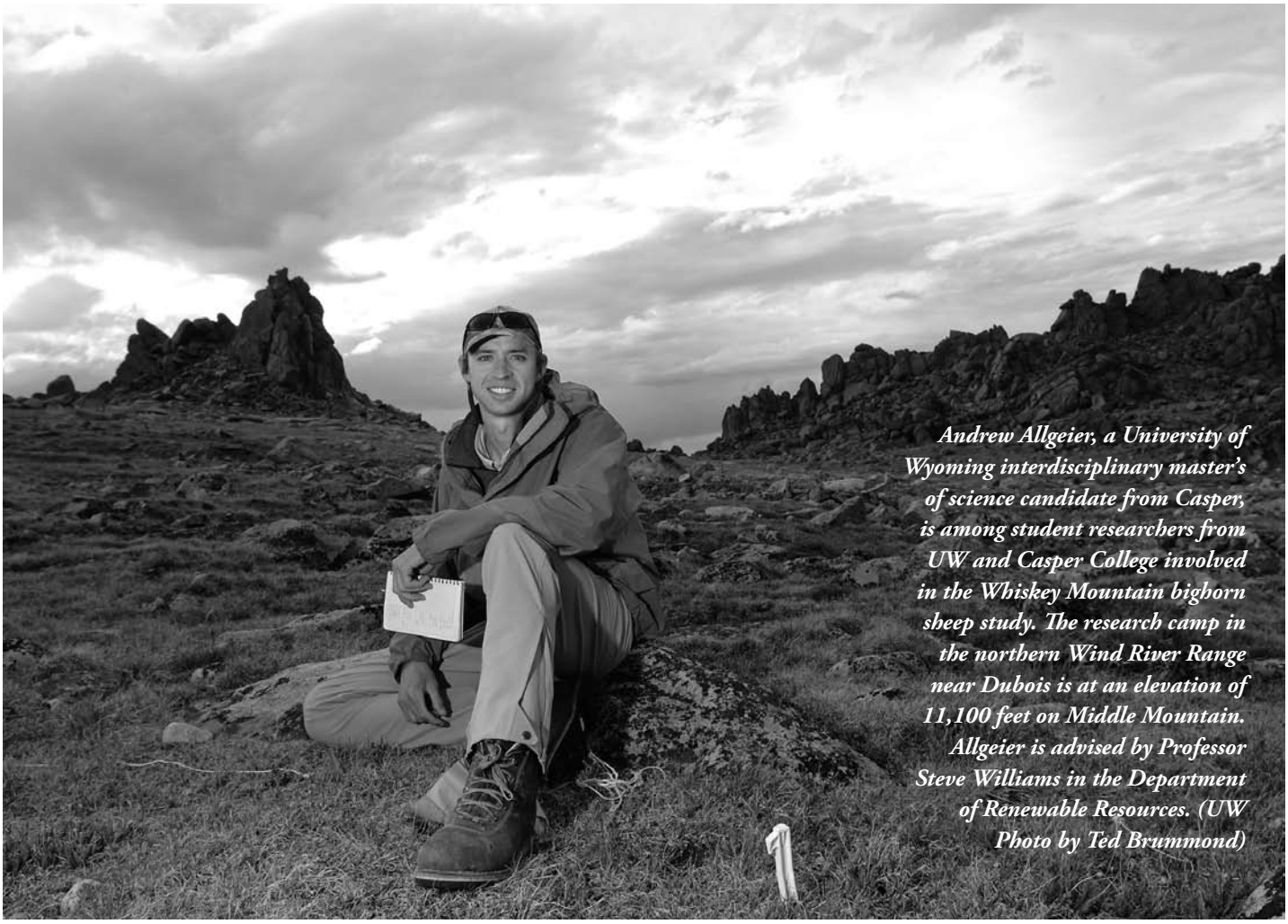
Professor Steve Williams and Battuya Bayarmagnai, a molecular biology senior from Mongolia, prepare to collect soil samples from one of the Beck's Bridge mineral licks.



Andrew Allgeier, a University of Wyoming interdisciplinary master's of science candidate from Casper, is among student researchers from UW and Casper College involved in the Whiskey Mountain bighorn sheep study. The research camp in the northern Wind River Range near Dubois is at an elevation of 11,100 feet on Middle Mountain. Allgeier is advised by Professor Steve Williams in the Department of Renewable Resources. (UW Photo by Ted Brummond)

Wildlife Service, to help solve the puzzle. Able to communicate with two-way radios, Mionczynski stayed on Middle Mountain while Hnilicka began tracking the ewes. He found they would descend 4,000 feet off the high plateau to two sites 7 1/2 miles away that contained mixed sage, grass, and forbs; however, instead of eating the plants, the ewes would ingest soil.

Mionczynski was fascinated when the news blared over his radio, and it didn't take long before he was watching the mothers fill their bellies with soil. "You could hear them crunch rocks between their teeth," remembers Mionczynski, thinking perhaps the soil held answers.

With bagged soil samples in hand, detailed field observations on paper, and more questions in his head, the researcher traveled to UW in 1998, where he met with Professor Beth Williams at the Wyoming State Veterinary Laboratory, which is managed by the College of Agriculture's Department of Veterinary Sciences. Williams and her husband, retired G&F wildlife veterinarian Tom Thorne, who both died in an automobile crash in 2004, were known for their cutting-edge wildlife disease research and had both studied Whiskey bighorns following the major 1990-91 die-off.

Beth Williams (no relation to Steve Williams) agreed the hypothesis of Mionczynski and Hnilicka sounded much like selenium responsive disorder (SRD). Earlier studies in domestic sheep revealed lambs having SRD quickly recovered after being given supplemental selenium. Laboratory tests subsequently showed soil consumed by bighorn ewes at the sites now known as Beck's Bridge mineral licks contained levels of selenium that were adequate to maintain proper health in domestic sheep.

"We started talking this up with some other veterinarians, and the news traveled fast," Mionczynski says.

Among those who heard the story was Steve Williams, a faculty member at UW since 1976, who immediately became fascinated with the idea selenium deficiency could help explain the Whiskey die-offs. "Selenium is the true Dr. Jekyll and Mr. Hyde of the biologically important elements. There is no other one known where the range between inadequate nutrition levels, adequate nutri-

tion levels, and toxic levels is so narrow," he says.

Williams, working with Mionczynski, fellow faculty members, and students from UW and Casper College, began the arduous trek to the site each summer beginning in 2002 to observe bighorn sheep and collect data.

Among the student researchers is Andrew Allgeier, a UW master's candidate from Casper who became involved with the project in 2003 while finishing his associate's degree in wildlife management at Casper College. He records temperatures, takes precipitation measurements, tests rain for pH, nitrates and sulfates, and bags samples of alpine soil and plant species being consumed by the sheep.

Working like a barber, he trims grasses, forbs, and sedges from one of the 36 study plots, separating the green stuff from the old, dried, brown stuff. "You get a pair of scissors in one hand, and pinch the plant with the other. You pinch and clip. It's kind of like getting a haircut," Allgeier says as threatening, late afternoon storm clouds descend on the research camp at an elevation of 11,100 feet.

"Even the storms are beautiful up here," quips Williams, who contends climatic factors may hold additional answers. "We have found that selenium in soils is controlled by the presence of carbon, nitrogen, and water. When the soil is very wet and when there is adequate available carbon and nitrogen, soil microorganisms reduce selenium from a form that can be taken up by plants to a form that cannot be taken up. When the soil dries out, the process is reversed."

The M-W team contends that in low-moisture years, bighorns receive adequate levels of selenium from the plants they eat but inadequate levels in years of high moisture. This, according to Mionczynski, stems from the oxidation-reduction potential of acidic granite soils, which render selenium less available when moisture is high. Lamb survival has increased in the last several years despite the area being in a drought since 1998, which seems to support the M-W hypothesis. "I'm predicting when we have another high-moisture year, we'll see a direct result in mortality," Mionczynski says.

Mionczynski and Williams take their theory another step. They speculate that high nitrate levels in rain – perhaps from pollution carried in clouds from both near and far – lessen available selenium levels in the alpine plants. "Where is this increased nitrogen coming from, and what affect is it having in these high elevations? We don't know exactly how this plays into it, but it seems to," says Mionczynski, who maintains that microorganisms in the soil grow at a faster rate because of the increase in nitrates. The faster-growing microorganisms cause oxygen levels in the soil to plummet, and it is under these conditions selenium is converted into a form unavailable to plants.

Professor Steve Williams and molecular biology senior Battuya Bayarmagnai, from Ulaanbaatar, Mongolia, collect soil samples from one of the Beck's Bridge mineral licks.

So, do the ewes instinctively leave behind their lambs and low-selenium forage knowing the Beck's Bridge mineral licks will help ensure survival? "That's a great question no one can probably answer," Mionczynski says. "Most biologists think their trip down the mountain may have to do with sodium, not selenium. Salt content at these licks is fairly high, and that might be the lure, just like people are lured to salty potato chips. When the bighorns eat the salty soil, they are also consuming selenium. That is one theory. Another is that animals can actually detect deficiencies in nutritional minerals, but that has never been shown, at least according to our literature search."

The G&F's Ryder isn't yet convinced selenium has anything to do with the Whiskey Mountain mystery. "In my opinion," Ryder says, "the jury is still out whether selenium deficiency is the primary cause of continued low lamb survival. This isn't saying John, Steve, and the others aren't good researchers, because they are. We hauled mineral blocks specifically formulated with high but

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non-toxic levels of selenium into one heart of the lambing range and blocks with no selenium into another, and we did not observe any statistically significant difference in lamb survival. That told me selenium may have played some role in lamb survival, but there was something else going on that was having a bigger impact."

The G&F's terrestrial habitat program supervisor, Gary Butler (B.S.'71, wildlife management, and M.S.'72, range management, both from UW), is even more doubtful about the theory. "I disregard it; I don't think it has any credence," he charges. "I don't think things like selenium content would change that quickly and that specifically on a site like that."

Butler and the G&F's wildlife management coordinator in Cody, Kevin Hurley (M.S.'85, zoology and physiology, UW), assert the early '90s die-off and subsequent years of low lamb survival mostly likely stem from degraded habitat conditions.

"Throughout their range, bighorns are an extremely sensitive critter to population density and corresponding habitat," Hurley says. Years of fire suppression and ensuing conifer encroachment – bighorns depend on grasses like Idaho fescue and bluebunch wheatgrass for their diets and open spaces to spot predators – coupled with the 1980s population boom seriously degraded their habitat, which led to poor health and subsequent high mortality, Hurley says.

University of Wyoming student researcher Andrew Allgeier trims plant material in one of the 36 study plots on Middle Mountain, which is in the Whiskey Mountain bighorn sheep unit in northwestern Wyoming. The plants are tested for selenium and other nutritional elements. (UW Photo by Ted Brummond)

Also coming into play, Hurley and Butler claim, are disease transmission, predation (mostly from coyotes and mountain lions), and, in some areas, habitat fragmentation caused by human development.

"There is a litany of issues affecting bighorn sheep in this state," Hurley says. "As far as the selenium question, it makes for interesting research; however, I continue to ask from an evolutionary standpoint, why would wetter years result in an adverse effect on selenium uptake and subsequent lamb survival? And, with robust lamb production and herd vigor through the 1980s, what happened, almost overnight, at the start of the 1990s to result in depressed lamb survival in the Whiskey Mountain herd?"

The M-W team still is of the opinion the selenium deficiency hypothesis is worth pursuing.

"We, too, ask the same question as Kevin Hurley, particularly since we have documented similar declines in bighorn sheep herds throughout the West at virtually the same time as the Whiskey Mountain die-off of 1991," Mionczynski says. "That leads us to believe the problem is regional rather than local and probably related to something in the atmosphere. It's an extremely complex issue we can't fully explain yet, and that's why it's hard to convince people there is a direct connection between available selenium and lamb survival."

Williams adds, "Like those with the G&F, my scientific obligation is to doubt the selenium hypothesis and to set up experiments to expose flaws in the hypothesis; however, to date, we have little data that have exposed flaws. Consequently, we continue to adhere to the hypothesis and test it further. This is the way and methodology of scientific investigation."

The M-W team, emphasizes Williams, has great respect for the position G&F personnel and others have on the theory. "Their doubt helps us to examine our own methods and experiments, which makes our efforts better. It is only in this collaborative manner that we uncover the truth."

Real-life projects enhance learning for interior design class

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

Not every college student has God perusing the final class project.

Each fall, students in Treva Sprout's senior level interior design class conduct a project with a client. This year, the students are designing plans for The Gardens in the Wyoming Union.

Last fall, students provided designs for several areas of Laramie Valley Chapel in eastern Laramie, across from Wal-Mart. Sprout, who is a member of the church, asked if her students could submit designs. The answer was yes.

"I didn't even hesitate to recommend this as a project for our students," says Sprout, who is busy helping implement the concepts accepted by the church's building committee. The eight students in the class formed teams of two to tackle various areas.

Teams created design ideas for the church entry, standing area, sanctuary, hallway to the coffee shop/commons area, and the men's and women's restrooms.

"It's a senior-level class. They'd learned so much before," says Sprout, an assistant lecturer in the Department of Family and Consumer Sciences. "All they had to do was expand on that knowledge. Everybody starts with the basics and uses this foundation to solve design problems. I didn't have any qualms."

The class met with the church building committee, which shed light on general design ideas they sought, and discussed the areas of the chapel they wanted help with, says Allison Boomgaarden, a student in the class.

"Having personal experience with real clients and the possibility of our ideas becoming real designs were incredibly important for what our future careers may hold," she says.

Not all the designs are being incorporated into the church, and some have had modifications. "The students' job was to give ideas," says Sprout. "Everything was presented in a 3D model and rendered format. There is such a conglomeration of ideas; there is no one student's design. It's a real-life experience and an excellent resume material, too."

That aspect is important, notes Boomgaarden. "I feel designing for a real-life scenario extremely enhanced the learning experience of the class," she says. "This real-life scenario will help us greatly when applying for jobs and working on future real-life designs. I would highly recommend a project involving a real-life scenario for any interior design student."

Each student received a letter from the design committee discussing the good quality of the designs. The letter can be part of a portfolio or resume, says Sprout.

The high praise comes with a large time commitment. "They are introduced to a project the second week of the semester," says Sprout. "The students meet twice a week, but they also have to put in many hours in the lab outside of class time. It's a big time commitment, but it's a senior design project – it should be."

Students are graded on whether they solved the design problem, says Sprout,

Allison Boomgaarden and other students in Treva Sprout's interior design class use computer programs to create designs. Designing for real-life projects greatly enhances learning, Boomgaarden says.

"and whether it worked for the intended function, their creativity, their unique approach, and on how well they used the computer programs."

Boomgaarden, who says she has a passion for interior design, loves the idea that joint efforts of a client's ideas and her own can create something beautiful for others to see. "I suppose seeing one of my designs in actual use would be much like the feeling an architect or engineer gets when they see a building they constructed," says Boomgaarden.

But if the design isn't appropriate, all that collapses. "If a designer designs something extremely creative but does not meet the needs of the client, then I would consider that design to be a failure," Boomgaarden says. "It is the utilization of the client's wants and needs and the interior designer's creativity and expertise that make a design a success."

Family, coworkers taste-testers for new

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

A little of this and a dash of that and Cent$ible Nutrition Program (CNP) educators stir nutrition with taste and produce a cookbook that not only provides good nutrition but saves Wyoming families on grocery bills.

More than 5,000 cookbooks were printed in September, but the process started in 2005 when the cookbook committee began revising existing recipes and testing new ones.

The recipe taste testers are family members and co-workers of CNP educators, but the true test of the sauce hitting the heat is whether CNP clients use the recipes at home.

The newest cookbook reflects revamped U.S. Department of Agriculture dietary guidelines – more fruits and vegetables and whole grains, says Betty Greear, CNP associate in Natrona County.

Other recipes were up for inclusion – if they met certain guidelines. Those call for common ingredients and must be low in fat and sugar. "But at the top of the list," says Greear, "is that a recipe is easy to do and tasty."

Sarah Dimitt, of Lusk, learns to cook her own baby food. "The cookbook showed me ways to create attractive, 'wanting-to-eat-it' meals that don't cost a lot to make. I saved close to $50 a month by buying foods to make at home. Cooking from scratch makes more food for less money."

Greear tested a few of the new recipes on her family, but most were tested on fellow employees at the Natrona County Cooperative Extension Service office.

"I gave them sheets of paper with numbers of recipes and asked for various comments about taste, texture, consistency, and mouth feel," says Greear. "I found I had to make it a blank test so they would be brutally honest. They are a polite bunch. They didn't want to upset me by saying my cooking wasn't any good."

Greear, who has about 200 clients a year graduate from her CNP classes, teaches primarily at drug and alcohol rehabilitation facilities. "I simply take the recipes and ingredients to the students, step back, answer questions, and have the clients make the dish," she notes. "I wanted to see how they handled the recipe, how easy it was for them, what they thought, and if there were flaws in the process."

The main question is, she says, is this something you would make at home? "That's very important to us," she notes.

Tressa Penrod, assistant CNP project coordinator, began layout of the edition in 2006 and guided the cookbook to printing.

"The cookbook was a collaborative effort and would not have been possible without the dedication and enthusiasm of everyone involved," says Penrod. "It was a huge undertaking, and everyone's commitment to the project makes it one of the most rewarding projects I've ever worked on. The result is a trustworthy new resource for families in Wyoming who want to feed their families better for less."

Recipes need to be basic with few instructions, confirms Jennifer Jacobsen, CNP senior coordinator in Teton County. Jacobsen, along with Greear, Penrod, and Beth Mikesell, was on the cookbook committee that reviewed the last cookbook and offered suggestions for improvement. Recipes for consideration came from the Women, Infant, and Children (WIC) program cookbooks and from those that caught the attention of CNP educators. The newest cookbook also has handouts and informational pages that make the resource as much a teaching tool as being a recipe book, Jacobsen says.

Jacobsen's clients also do

recipes in CNP cookbook

the cooking. "I walk them through it and try to have the clients do everything," Jacobsen says. Her clients are mostly Hispanic, mostly low-income, and she also has clients from WIC. She has about 30 to 40 a year who work through the 13 lessons.

When the time comes for clients to cook, there can be that initial sinking feeling of a recipe not working, she says, "But at the same time, they work with it and try to figure it out. I haven't had too many failures."

Mikesell, CNP associate in Uinta County, tried out the proposed recipes on her husband and three children. "I think it went pretty well," she says. "My husband was easier to test on than my children because of the whole grains. Kids are pickier."

The recipes have to be tested, she says. "Just because something sounds good doesn't mean it is. You don't want to spend a lot of time cooking."

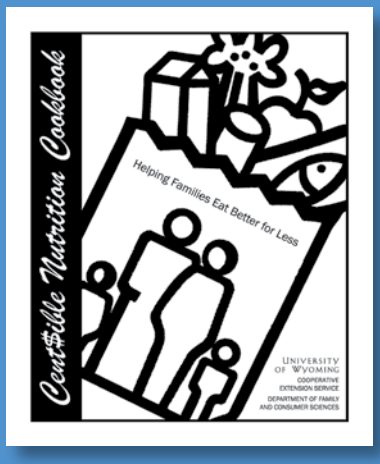
Mikesell has about 50 a year graduate from her classes. She also has a hands-off approach. "They do the cooking. Of course, I may show them," she adds. "There's a whole variety of people who take the classes. Some haven't had any cooking experience while some do."

Many parents haven't passed down to their children how to cook, she says. "Learning how makes them really feel happy," Mikesell notes. "People feel better about themselves, and they are learning something they can use to help their families."

Most of her clients are married with young children, and many are Hispanic. The Spanish cookbook, printed this year, has recipes in both Spanish and English. "I don't speak Spanish, and I have had some clients who speak only Spanish. I thought 'Wow, how am I going to do this?'" But it has worked out really well," she says. "They can understand what I'm saying and can look at the cookbook and see both. It helps that CNP has produced the handouts in Spanish, too."

Adds Mikesell, "Tressa Penrod really did a good job with the new cookbook. It was good before, but now it's even better."

From left, Char Anderson, Cent$ible Nutrition Program coordinator in Carbon County, Amber Hollaway, Kathi Whitworth, and Cathy Wilkins participate in nutrition classes at Hanna.



Cookbook only part of $4 million program

The latest Cent$ible Nutrition Program (CNP) cookbook is only a part of the program, with a budget of approximately $4 million for the 2007-08 program year.

Of this, $2.3 million is from federal funding and $2 million is from non-federal in-kind match, says Mary Kay Wardlaw, CNP director. CNP receives $1 in federal funds for every dollar in-kind match. In-kind match can include office space, professional time, teaching rooms, and more.

More than 1,500 adults graduated from CNP classes this past year. Graduates participated in an average of about nine sessions. This curriculum, just one of many within CNP, has the potential to reach more than 4,000 people in Wyoming. The cookbook is viewed as the textbook for this series, says Wardlaw.

College houses Wyoming Reclamation

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

University of Wyoming scientists envision their Wyoming Reclamation and Restoration Center (WRRC) as an investment in the state's future.

The center will offer information, training, and research to reclaim energy development-affected landscapes in Wyoming and beyond its borders.

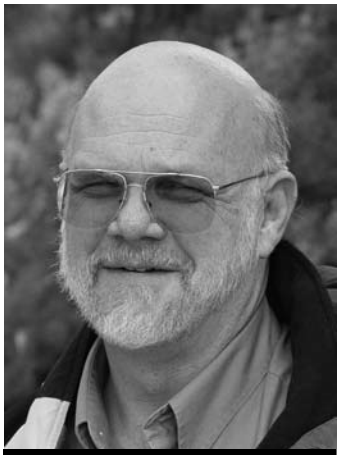
"Maybe I'm inflating this a little bit, but I don't think so. We have a vision," says center director and Professor Steve Williams, who is in the Department of Renewable Resources in the College of Agriculture.

The center's mission is to research, teach, serve, and share knowledge in restoring, reclaiming, and rehabilitating degraded land and ecosystems.

The center, up and running and expected to move into its own rehabilitated offices the end of last year, draws upon expertise across campus, including the Department of Agricultural and Applied Economics in the College of Agriculture, the departments of botany and zoology/physiology in the College of Arts and Sciences, the School of Environment and Natural Resources, and the School of Energy Resources.

The center was created about four years ago, and since then funding has been secured and efforts organized and focused. The objective is to address natural resource management in the wake of natural gas development in the state, Williams says.

Professor Rich Olson



Professor Steve Williams

"We've gotten a bit of a bloody nose," says Williams. "The '*New York Times*' and '*National Geographic*' have described southwest Wyoming as an area to be sacrificed for the good of the nation. We feel it is not necessary to sacrifice that area for the good of the nation. Can we have it both ways? The landscapes, the wildlife, the vistas? We are trying to figure out if there can be a balance between energy development and ecological integration."

Professor Rich Olson, head of the Department of Renewable Resources, says he is ecstatic the center is now functioning.

and Restoration Center

Faculty members in renewable resources and the College of Agriculture for years have been conducting research and academic programs in restoring, reclaiming, and rehabilitating degraded ecosystems, Olson says.

"With increased visibility and funding of our WRRC, we will be able to attract more research funding, recruit more students, enhance our outreach extension educational programs, and provide more technical service to off-campus clientele," Olson says.

More importantly, he adds, "The center offers an opportunity to provide regional leadership in protecting and maintaining sustainable natural resources in the face of rapidly accelerated energy development activities. This will provide benefits for many future generations."

The center is administered jointly under the dean of the College of Agriculture and the director of the School of Energy Resources.

Its products include students, applied and fundamental science, public service through outreach education, and technical assistance, says Williams.

Some current reclamation efforts in Wyoming include techniques that work in other regions of the country, like Illinois and Iowa, but not here.

"Some are using techniques shown to be erroneous. There's a lot of misinformation out there," says Williams.

For example, pipelines being constructed across and out of Wyoming extend through varied environments. "Revegetation is a tricky business," he says. "You can't use one reclamation technique for the Red Desert and into Colorado."

With increased energy development, he says, "The time is ripe for an increased awareness and focus of the center. Part of the reason we live here is the wildlife, the open space, the clean air, and sparkling peaks. This is a pretty special environment in which we live. The energy is not a renewable resource, but the rangelands and forests are. I think that is what the WRRC is really all about – an investment in the future of the state – an ecological integration of the ecosystems in the state."

Collaborators to the center include:

From UW – The UW School of Environment and Natural Resources, Wyoming Geographic Information Science Center, Wyoming Natural Diversity Database, Wyoming Cooperative Fish and Wildlife Research Unit.

County – The Wyoming Association of Conservation Districts.

State of Wyoming – Department of Environmental Quality, Game and Fish Department, State Engineer's Office, State Forestry Division, Water Development Commission, Department of Agriculture, Weed and Pest Council.

Federal agencies – Bureau of Land Management, National Park Service, U.S. Department of Agriculture Forest Service, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, U.S. Geological Survey.

Private interests – Consulting firms, reclamation and restoration companies, and mining and energy companies.

More than 200 ag students earn scholarships

More than 200 College of Agriculture students were presented scholarships during the annual Brand of Excellence Scholarship Banquet October 26 at the Crane-Hill dining area.

Each was recognized by Associate Dean Jim Wangberg, director of the Office of Academic and Student Programs. The event also gives the college the opportunity to thank scholarship donors.

The Brand of Excellence program continues to grow in terms of student scholarship numbers and funding, Wangberg says, currently awarding more than 200 scholarships exceeding $346,000.

The 2007 recipients follow:

Ag Day Barbecue – Daniel Alderse Baes, Clovis, New Mexico, senior, agricultural business (ag business).

Harold P. Alley – Jordana LaFantasie, Aurora, Colorado, graduate student, agronomy student; Caley Gasch Salava, Cody, graduate student, agronomy.

ASFMRA Thomas M. Tisdale Memorial – Chase Dodson, North Platte, Nebraska, junior, ag business.

Battershell and Palmer – Jack Leonhardt, Cowley, senior, microbiology; Andrew Stith, Laramie, senior, microbiology.

O.A. Beath – April Bock, Ravenna, Nebraska, junior, rangeland ecology and watershed management (REWM).

Alan A. Beetle – Abigail Martin, Dixon, Illinois, senior, REWM; Morgan Wolvington, Chadron, Nebraska, senior, REWM.

Jim and Marian Berger Graduate – Christopher Ellison, Xenia, Ohio, graduate student, REWM.

Geneva Bird Memorial – Erin Jones, Cody, sophomore, family and consumer sciences (FCS).

Margaret Boyd (all are majoring in FCS) – Amanda Barlow, Loveland, Colorado, sophomore; Nicole Canete, Custer, South Dakota, junior; Tiffany Casey, Longmont, Colorado, junior; Anna D'Hooge, Lakewood, Colorado, sophomore; Sarah Downs, Aurora, Colorado, sophomore; Kimberly Freimuth, Cheyenne, senior; Kristin Herman, senior, Laramie; Amber Needham, Cheyenne, junior; Joshua Nichols, Littleton, Colorado, junior; Kaitlin Sanders, Ogallala, Nebraska, junior; Brittni Turner, Meeker, Colorado, junior; Katelin Watson, Fort Collins, Colorado, sophomore.

Mark Carson Family Agriculture – Matt Goodman, Sheridan, senior, molecular biology (MB); Kevin Grauberger, Mitchell, Nebraska, sophomore, MB; Dietric Hennings, Cheyenne, senior, microbiology; Moriah Shadwick, Douglas, senior, REWM; Andrew Telander, Laramie, freshman, REWM; Michael Willie, Laramie, senior, FCS.

Cenex Harvest States Foundation (all are majoring in ag business) – Shantel Anderson, Laramie, senior; Kim Josselyn, Aurora, Colorado, senior; Jade Kane, Decker, Montana, junior; Garrett Paisley, Imperial, Nebraska, junior.

John and Esther Clay – Cody Lofland, Gillette, senior, REWM.

James M. and Blanche Davidson – Jeremiah Lyman, Ten Sleep, junior, animal and veterinary sciences (ANVS).

Ron and Brenda DeLaney – Kaitlin Farbotnik, Doylestown, Pennsylvania, junior, agroecology.

Norma and Neil DeLapp Agricultural – Kendall Hickman, Casper, sophomore, ANVS.

Howard I. Downer Wyoming State FFA Officer – Bethany Jenkins, Wheatland, sophomore, agricultural communications (ag communications).

William L. "Bill" Duncan – Jessica Jensen, Cheyenne, senior, FCS.

T.J. Dunnewald Memorial – Aaron Ostrom, Cheyenne, junior, agroecology; Amanda Taylor, Alpine, junior, agroecology.

David H. and Ruth H. Eddington Memorial – Casey Degabain, Cheyenne, freshman, agriculture undeclared.

Todd Eustace Memorial – Helen "Annie" Collins, Lander, junior, ANVS/ag communications.

Herbert G. Fisser Memorial – Rives White, Daniel, sophomore, REWM.

Alvin F. Gale – Clint Starkebaum, Amherst, Colorado, junior, agroecology.

Joe S. and Kathy Gloyd – Daniel Siltman, Coal Valley, Illinois, senior, ANVS.

Philo Ayers Goodrich Memorial – Nicholas Lambert, Osage, sophomore, REWM.

Hagerty Family – A recipient will be named later.

Jean Harris Memorial – Nicole Giraldo, Laramie, senior, MB; Thyra Shepherd, Laramie, senior, ag communications.

John A. Hill Memorial Trust Fund – Jennifer Harris, Lander, senior, microbiology; Joanna Hergenreder, Nunn, South Dakota, senior, ANVS; Tanya Madden, Potter, Nebraska, sophomore, ag business.

N.W. Hilston – Alexandria Newman, Lander, freshman, ag communications; Meghan Reedy, Vale, South Dakota, sophomore, REWM.

Hines Family – Kassi Bauman, Cheyenne, junior, ANVS; Sonnet Chakmakian, Laramie, junior, FCS.

Verna J. Hitchcock – Elizabeth Scudder, Pavillion, senior, FCS.

Hovey Family – Whitney Harmon, Laramie, junior, FCS.

Dr. Rue Jensen Veterinary – Tetsuko Tsuchiya, Fort Collins, Colorado, senior, ANVS.

Eldon and Josephine Johnston Family Graduate Fellowship – Bridgette White, Laramie, graduate student, agricultural economics.

W. Gordon Kearl Agricultural Economics – Jaimy Cass, Hereford, Colorado, senior, ag business; Ben Fritz, Greeley, Colorado, sophomore, ag business.

Kercher Family International Graduate Student in Animal Science – Junfeng Tong, Hangzhou, China, graduate student, ANVS.

Knadler Family – Kathleen Meyers, Laramie, senior, MB.

Harry La Toush – Don Simmons, Encampment, senior, REWM.

William and Charlotte Laycock – Cole Lambert, Osage, junior, REWM.

Oletha and Loren Likins Memorial – Merritt Carpenter, Torrington, senior, REWM; Jeremiah Donaldson, Torrington, freshman, ag business; Courtney Ellis, Lingle, freshman, microbiology; Jessica Foster, Torrington, senior, ag communications; Katelyn Foster, Torrington, freshman, ag business; Jessica Freeburn, Fort Laramie, sophomore, FCS; Holden Hergert, Lingle, freshman, REWM; Kyle Kilty, LaGrange, junior, ag business; Jack Miskimins, Torrington, junior, REWM; Colby Ochsner, Lingle, sophomore, MB; Angela Ostrander, Lingle, freshman, MB; Charli Raben, Torrington, junior, FCS; Adam Wambolt, Torrington, senior, ag business; Megan Woodward, Torrington, junior, microbiology; Lindsay Worley, Torrington, sophomore, FCS; Colin Yorges, Torrington, freshman, ag business.

Don and June Lobdell – Caitlin Gappa, Parker, Colorado, sophomore, ANVS; Cassie Jo Hurley, Philip, South Dakota, junior, REWM.

Leroy and Martha Maki – Keegan Harkins, Scottsbluff, Nebraska, junior, microbiology; Douglas Watt, Upton, senior, microbiology.

R.J. and Alice R. McColloch – Zebulun Arendsee, Cheyenne, sophomore, MB.

Mary Mead Memorial – Jennifer Bell, Laramie, sophomore, MB; Alicia Smith, Sheridan, junior, renewable resources.

Mary Mead Graduate Fellowship – Rebecca Dailey, Cheyenne, graduate student, ANVS.

Jerome Maurice "Jerry" Meyer Memorial – Robert Schmelzle, Gillette, senior, REWM.

Mill Family – Tara Gade, Lewellen, Nebraska, senior, FCS; Christine Schinzel, Pine Bluffs, senior, ANVS; Jami Terra, Oakdale, California, senior, ANVS.

Helen G. Miller (all are majoring in FCS) – Adrianna Carlton, Gillette, senior; Anna Fahy, Manville, junior; Benjamin Huber, Laramie, junior; Tabitha Reece, Riverton, senior.

National Western Stock Show – Amy Berry, Cheyenne, sophomore, ANVS; Jessie Berry, Cheyenne, sophomore, ag communications; Allison Boomgaarden, Cheyenne, senior, FCS; Garrett Horton, Riverton, sophomore, ag business; Reese Irvine, Lander, senior, REWM; Katherine Kessler, Lander, senior, ANVS; Jerod Smith, Meeker, Colorado, senior, agroecology; Kelsie Speiser, Casper, sophomore, ANVS.

National Western Stock Show Graduate Student – Laura Linn, Wilson, graduate student, ANVS.

National Western Stock Show Livestock Leadership Internship – Stacia Berry, Cheyenne, senior, ANVS.

National Western Courtenay C. Davis Memorial Honoring Clifford P. Hansen – Sarah Hanlon, Cheyenne, junior, REWM; Julie Saur, Gillette, senior, ag business.

Lee Painter Memorial – Nevin Lawrence, Casper, sophomore, agroecology; Lydia Renneisen, Cheyenne, sophomore, REWM.

Gary and Gloria Parker – Gregory Addleman, Douglas, senior, ANVS.

Henry Petz (all are majoring in ag business) – Raenell Edsall, Hulett, sophomore; Kendall Eisele, Cheyenne, junior; Sean Kennedy, Rock River, freshman; J. Garrett Klein, Pavillion, senior; Kellen Little, Leiter, sophomore; Eli Robbins-Lilley, Laramie, sophomore; Steven Snyder, Worland, junior.

UW "Jack" Radichal – Teresa Brengle, Sheridan, sophomore, FCS; Shaleas Harrison, Powell, junior, MB; Robert Huguez, Mills, junior, MB; Kelly Lear, Rock Springs, junior, ANVS; Matthew Ley, Cheyenne, junior, REWM; Joel Luben, Casper, senior, MB; David Sircin, Laramie, senior, MB; Kevin Sun, Casper, junior, MB.

Ross Richardson Memorial – Nathan Dittman, Omaha, Nebraska, senior, agroecology.

W.A. Riedl – James Adrianos, Laramie, senior, agroecology; Michael Baldwin, Fairfax, Virginia, junior, agroecology.

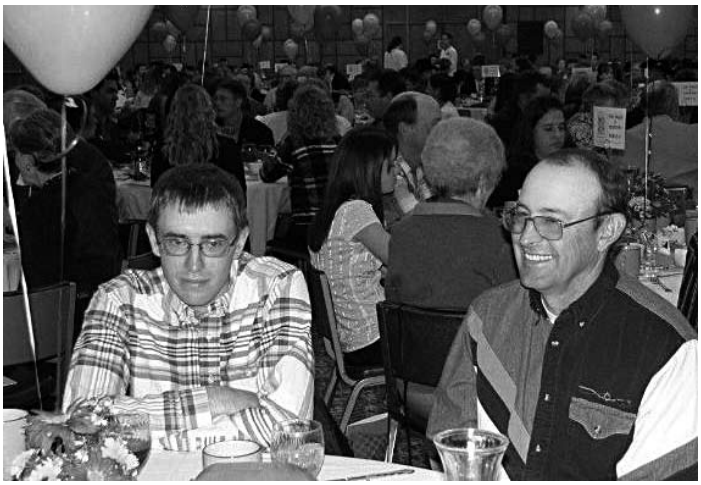
Noreen Ring (all are graduate students majoring in ANVS) – Jennifer Arnall, Grass Valley, California; David Edmunds, Roanoke, Virginia; Amanda Fluegel, Dakota, Illinois.

Schmale Brothers Memorial – Brittany Whitt, Meeteetse, senior, ANVS; Benjamin Wise, Worland, senior, REWM.

Amanda S. and Oscar W. Schmale – Jessie Atkinson, Mills, senior, ag communications/ agricultural education (ag education); Rocky Barrett, Powell, senior, MB; Lacey Burrell, Newcastle, senior, FCS; Brittney Daughton, Longmont, Colorado, freshman, FCS; Tyler Lay, Wheatland, freshman, ag education; Lander Nicodemus, Cheyenne, senior, ag education/animal science.

Carroll O. "Schoony" Schoonover – Travis Allen, Cheyenne, sophomore, ANVS; Jennifer Cady, Riverton, junior, ANVS.

John H. and Hilda Simpson – Rollin Winter, Leiter, junior, REWM.



Todd Small of Wheatland, joined by his father, Ken, was among the more than 200 College of Agriculture students presented scholarships at the Brand of Excellence Scholarship Banquet. Small is a freshman majoring in animal and veterinary sciences.

Paul Stock Foundation – Hirchell LeClair, Lander, junior, ANVS; Spencer Otto, Powell, junior, REWM.

Paul O. Stratton – Heather Hamilton, Lance Creek, senior, ANVS/ag communications; Samantha Manore, Laramie, sophomore, ANVS; Stephanie Pruitt, Cheyenne, junior, ag business; Rachel Shipley, Lander, sophomore, ANVS; Katie Swift, Laramie, junior, ANVS.

Robert Swan Memorial – Kaylee Reed, Newcastle, junior, ANVS.

Gordon and Reta Mae Tate – Elizabeth LeSatz, Chugwater, sophomore, ag communications.

Robert Taylor Memorial – A recipient will be named later.

Ira P. Trotter – Joshua Jeanneret, Grand Junction, Colorado, senior, REWM; Kayla Otto, Marshall, Minnesota, sophomore, ANVS.

Kaz and Toshie Uriu – Brianna Whitlock, Laramie, junior, FCS.

Andrew and Connie Vanvig (all are majoring in ag business) – James Baldwin, Rawlins, senior; Angel Bundy, Gillette, senior; Jessica Coonts, Brighton, Colorado, sophomore; Jamie Hart, Thermopolis, junior.

Andrew and Connie Vanvig Graduate Fellowship Endowment – Brian Strauch, Laramie, graduate student, agricultural economics.

Vass Memorial – Michael Asay, Lovell, senior, microbiology; Brad Mills, Stratton, Colorado, senior, ANVS; Lindsey Zellitti, Durango, Colorado, senior, ANVS.

Daisy M. Walters – Stephani Aimone, Laramie, senior, FCS; Jessica Platt, Laramie, sophomore, FCS.

Fred E. Warren Scholarship Honoring Dean J.A. Hill – Molly Janak, North Platte, Nebraska, freshman, FCS.

Watt Brothers – Jess Anderson, Laramie, junior, MB; Benjamin Bump, Elkhorn, Nebraska, senior, REWM; Alison Simpson, Cheyenne, senior, microbiology.

Joe and Arlene Watt – Battuya Bayarmagnai, Mongolia, MB; Bartley Brogan, Keystone, Nebraska, junior, ag business; Krystle Dean, Imperial, Nebraska, senior, ag communications; Christopher Fare, Gillette, senior, REWM; Ryan Farthing, Iron Mountain, sophomore, ag business; Michael Fernandez, Wray, Colorado, freshman, ANVS; Oliver Fry, Laramie, senior, ANVS; Matthew Fowler, Cheyenne, senior, MB; Joe Griffith, Encampment, junior, REWM/ environment and natural resources; Nigel Miller, Elizabeth, Colorado, sophomore, ANVS; Caleb Owens, Craig, Colorado, freshman, REWM; Megan Sabol, Colorado Springs, Colorado, senior, ag communications; Lisa Simons, Billings, Montana, freshman, FCS; Brittany Treat, Saratoga, sophomore, microbiology; Deisy Vaske, Laramie, junior, FCS; Neil Veen, Carrington, North Dakota, senior, ag business;

(Continued on Page 16)

Lauren Whitney, Coto de Caza, California, freshman, ANVS.

Wheel of Brands – Kyle Bifano, Colorado Springs, Colorado, junior, ANVS; Kristen Graham, Laramie, sophomore, ANVS; Rachelle Jensen, Absarokee, Montana, junior, microbiology; Micki Paris, Marsland, Nebraska, senior, ANVS; Corey Schuknecht, Iowa Falls, Iowa, senior, ANVS.

Whitson Undergraduate – Timothy Kirkland, Madison, Alabama, senior, agroecology.

Lee Wiegand Excellence Fund in Agriculture – Josephine Davies, Princeton, sophomore, ag communications; Braeton Hill, Collbran, Colorado, senior, ag communications; Matt Korkow, Hanna, sophomore, ANVS/agriculture education; Patrick Miller, Littleton, Colorado, senior, REWM.

Wyoming Pork Producers – A recipient will be named later.

Y Cross Ranch – Justin Uhrig, Minatare, Nebraska, senior, ANVS.

UW Trustees' Superior Student – Caitlin Blackburn, Cody, junior, ANVS; Katherine Rogers, Kemmerer, senior, MB; Sheanna Steingass, Sheridan, senior, ANVS.

UW Presidential High School Honor – Evan Abbaszadeh, Gillette, junior, MB; Michelle Adams, Riverton, junior, FCS; Kendra Anderson, Evanston, senior, MB; James Bergene, Cheyenne, junior, MB; Kari Boroff, Daniel, senior, REWM; Richard Coles, Casper, junior, MB; James Comer, Gillette, junior, ANVS; Emily Feuz, Jackson, senior, ag communications; Sara Gomendi, Riverton, senior, FCS; Sarah Holifield, Sheridan, senior, FCS; Adam Hughes, Casper, senior, microbiology; Stephanie Hunter, Laramie, senior, FCS; Robyn Johnson, Laramie, junior, ANVS; Jessica Leetch, Glendo, sophomore, ag business; Heather Likins, Lander, senior, ANVS; Camden Mason, Cheyenne, senior, FCS; Rita Palm, Elk Mountain, junior, ANVS; Mae Peterson, Pinedale, senior, REWM; Sammie Redding, Wheatland, senior, ANVS; Brandon Reynolds, Lander, senior, REWM; Stephanie Russell, Wheatland, junior, ag communications; Sandra Smylie, Douglas, junior, microbiology; Jacqueline Twiford, Glendo, sophomore, ANVS; Ashley Whitman, Kinnear, senior, REWM; Jamie Wilder, Cody, junior, FCS; Sara Woirhaye, Laramie, senior, ANVS; Mallory Zimmerer, Lyman, Nebraska, senior, microbiology.

UW Presidential Community College Honor – Amanda Roe, Rapid City, South Dakota, senior, agroecology; Anna Sibbett, Casper, senior, FCS; Bryan Wilson, Lander, senior, ag business.

Department Scholarships

Bohnenblust/Kolp Student Research Experience – Jordana LaFantasie, Laramie, graduate student, agronomy; Caley Gasch Salva, Cody, graduate student, agronomy.

G.H. Bridgmon – James Obuya, Nairobi, Kenya, graduate student, agronomy.

Farm Credit Services of America – Stacia Berry, Cheyenne, senior, ANVS; Heather Hamilton, Lance Creek, senior, ANVS.

Harold F. Eppson – Kristen Horner, Big Horn, senior, microbiology.

Theodor Hanekamp Memorial – A recipient will be named later.

Hyatt – A recipient will be named later.

Ben and Allene Kohrs Memorial Dietetics – Lacey Burrell, Newcastle, senior, FCS; Sara Gomendi, Riverton, senior, FCS; Sonnet Chakmakian, Laramie, senior, FCS; Stacy Johnson, Laramie, junior, FCS.

Irene Rosenfeld Scientific Achievement – Alisa Mori, Kemmerer, senior, MB.

Gayle Neubauer Shaw – Caroline Omolo, Kisumu, Kenya, graduate student, FCS.

Jerry Schuman and Bud Smith Rangeland Improvement Graduate Award – Victoria Regula, Mammoth, graduate student, REWM; Jennifer Schomp, Bethel, Vermont, graduate student, REWM.

Weeds of the West FFA Agronomy – Garrett Ross, Yoder, freshman, agroecology.

Wyoming Dietetic Association – Camden Mason, Cheyenne, senior, FCS.

Wyoming Section, Society for Range Management Outstanding Graduate – A recipient will be named later.

Wyoming Section, Society for Range Management Outstanding Undergraduate – Ashley Whitman, Kinnear, senior, REWM.

Marion Yule – Anna Fahy, Manville, junior, FCS; Jessica Jensen, Cheyenne, senior, FCS; Katelin Watson, Fort Collins, Colorado, sophomore, FCS.

Wyoming 4-H Scholarships

Ella E. Schloredt – Sage Askin, Douglas, freshman, REWM; Kari Boroff, Daniel, senior, REWM; Merritt Carpenter, Torrington, junior, REWM; James Comer, Gillette, junior, ANVS; Stacee Craig, Powell, freshman, ANVS; Raenell Edsall, Hulett, sophomore, ag communications; Brittany Epler, Veteran, sophomore, ag business; Garrett Horton, Riverton, sophomore, ag business; Odessa Mathias, Lusk, sophomore, ag business; Kathleen Meyers, Powell, senior, molecular biology; Rita Palm, Elk Mountain, junior, ag business; Mae Peterson, Pinedale, senior, REWM; Charli Raben, Torrington, junior, FCS; Tabitha Reece, Riverton, senior, FCS; Stephanie Russell, Wheatland, junior, ag communications; Todd Small, Wheatland, freshman, ANVS; Amanda Staples, Cheyenne, freshman, ANVS.

Janie Smith – Amanda Staples, Cheyenne, freshman, ANVS.

Coxe Memorial – Helen "Annie" Collins, Lander, junior, agriculture undeclared.

New Scholarship

In 2007, the following individuals created new permanent scholarships within the college. These scholarships will be awarded for the first time at the 2008 Brand of Excellence Scholarship Banquet.

Edward H. "Ted" and Susan King Lloyd Graduate Research Award.

Scholarship Committee

Members of the scholarship committee include faculty members Chris Bastian, Shane Broughton, Mark Gomelsky, Steve Horn, Donal O'Toole, Jim Waggoner, and Dave Wilson.

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

William Henry Jackson lugged bulky photographic equipment across the West to provide some of the first such images of Wyoming to the world.

Images taken by Ginger Paige and others using a new high-tech device are also a first of their kind in the state.

Paige, an assistant professor in the Department of Renewable Resources, traipses over various Wyoming landscapes using Light Detection and Ranging (LiDAR) equipment to obtain watershed topography. The device fires eye-friendly laser pulses to record minute details, some to 7 millimeter resolution, of watershed areas.

Paige takes images from different locations, and uses software to merge the images

High-tech laser equipment records Wyoming watershed topography

Assistant Professor Ginger Paige

together for an uncanny three-dimensional view.

The equipment greatly improves time and performance over traditional survey methods, in which at least two people are needed to obtain elevations at many points.

"It improves the ability to not only measure but model landscapes and processes," says Paige, who specializes in water resources. "We can't model something we can't measure. We try all the time, but we can't do it very well."

Images taken by LiDAR at several locations are merged into one image using software.

The LiDAR can also be used to record vegetation characteristics in very high detail.

For Paige, the LiDAR's real value will be in providing knowledge of how landscapes and watersheds change. "It allows us to get highly detailed watershed characteristics – both topography and vegetation," she says. Images can be taken over time and compared. This is very useful for looking at water movement and erosion processes on our landscapes, she says.

The technical time-lapse photography would give insight into effects of how parts of Wyoming are being – or not being – changed by natural water runoff and water discharged from mineral and gas operations.

In watershed hydrology, the amount of runoff is dependent upon initial soil moisture, the size of a storm, the rainfall intensity, soil types, the type and locations of vegetation in an area, and the topography.

"The issue is what are the things that happen not only to a channel but in sediment transport and in water quality over distance and time," Paige says. "Did the runoff event really change what was there before, and how much did it change?"

Other university scientists are also using LiDAR in Wyoming.

James R. Steidtmann and Mark Tomasso from the University of Wyoming Enhanced Oil Recovery Institute are using ground-based LiDAR to characterize rock outcrops in key locations in Wyoming, says Paige. This information will help model oil and gas reservoirs in the state. Researchers in renewable resources and geology are using both airborne and ground-based LiDAR to look at water flow patterns and erosion in the Little Laramie River.

LiDAR images taken periodically would provide scientists a detailed data history.

A LiDAR image of trees on the University of Wyoming campus.

PROGRAM NOTES

The late Gordon Kearl

Agricultural and Applied Economics

W. Gordon Kearl, professor emeritus of agricultural economics in the College of Agriculture, died October 18, 2007. He was 80.

"Gordon was a frequent visitor, constant friend, and valued adviser to the faculty and staff of the Department of Agricultural and Applied Economics," says Associate Professor **Roger Coupal**, interim department head.

"The faculty members always enjoyed Gordon's visits and discussions. Gordon strongly believed in the Liberty Hyde Bailey quote 'The University belongs to the People of the State. It will justify its existence only as it serves the People.' He was responsible for this quote framed and hung in many offices on campus," Coupal says.

Kearl retired from the University of Wyoming in 1990 after 28 years of service. He was interim department head of agricultural economics from 1983 through 1985. He was born in 1927 and grew up on a ranch near Laketown, Utah.

Kearl received his bachelor's and master's degrees in agricultural economics from Utah State University in 1949 and 1951, respectively. He served in both the Navy and the Air Force. He earned a Ph.D. from the University of California, Berkeley, in 1968.

Kearl served on numerous research committees regarding the economics of range and ranch management during his career, and he published extensively in the areas of range economics, livestock economics, public land grazing, sagebrush control, agricultural taxation, and land appraisals and values.

"Gordon was a generous contributor to UW and the College of Agriculture. He was fond of sharing his ranching experiences with both students and colleagues, and he also was an avid Cowboy and Cowgirl fan, golfer, and fisherman," Coupal says. "He will be missed."

Stacia Berry

Animal Science

Stacia Berry, a senior majoring in animal and veterinary sciences, was one of six University of Wyoming students selected as UW Gold winners for 2007.

Winners were announced in October. Cardinal Key, the junior class honor society, sponsors UW Gold. Students are nominated on the basis of success in academics, community service, and leadership.

Berry, of Cheyenne, is the daughter of **Janice and Jay Berry**, and her adviser is Professor **Doug Hixon**, head of the Department of Animal Science.

Three master's candidates in the department took the top three spots at the Graduate Student Poster Competition at the Colorado Nutrition Roundtable hosted by Colorado State University in Fort Collins September 27.

The event was sponsored by the Colorado, Wyoming, western Nebraska, and western Kansas chapter of the American Registry of Professional Animal Scientists.

Colt Knight of South Charleston, West Virginia, working on a master's degree in animal genetics, placed first and won $500. He is working with Assistant Professor **Kristi Cammack** in animal breeding. His presentation focused on sulfate toxicity in feedlot steers.

Platt Price of Malad, Idaho, who is completing a master's degree in ruminant nutrition, finished second and received $250. His presentation was on providing "ruminally undegradable" protein to nutrient-restricted cows during early gestation and its effects on the performance of the cattle. He described "ruminally undegradable" as protein that is not digested in the rumen but is supplied to the small intestine.

Price's adviser is Associate Professor **Bret Hess**.

Frances Niemela of Duluth, Minnesota, who is working on a master's degree in beef production, capped

the sweep with a third-place finish and earned $100. Her presentation was on the effect of cobalt supplementation on carcass traits in feedlot cattle. She is advised by Professor **Steve Paisley**.

Assistant Professor Enette Larson-Meyer

Family and Consumer Sciences

If looking for research and projects on applied health issues, look no further than the Department of Family and Consumer Sciences (FCS), advises Professor **Karen Williams**, head of the Department.

Assistant Professor **Enette Larson-Meyer** and graduate student **Kentz Willis,** of Lovell, are beginning the study "Effect of Honey Versus Sucrose on Thermogenesis and Ghrelin and Neuropteptide YY Responses: Mechanisms Explaining Honey's Beneficial Influence on Body Weight Regulation."

Professor **Michael Liebman** has a current research project, "Oxalate Analysis of Food," that analyzes nearly 100 foods for total oxalate and soluble oxalate content. This will provide valuable information for kidney health. He has even analyzed food being fed to monkeys in a zoo to assist with keeping them healthier.

Associate Professor **Shane Broughton** and Associate Professor **Rhoda Schantz** are continuing their work on a shea nut butter spread that helps lower cholesterol and have a patent pending for the process. Broughton also is filing additional patents on his asthma diagnostic tools based on research conducted by him and graduate students **Erica Ross** of Omaha, Nebraska, and **Brittney Hahn** of Jackson**.**

FCS Assistant Professor **Kari Morgan** and Assistant Professor **Anne Marie Hart** in the School of Nursing are contributing to an understanding of rural health issues affecting families in their "Exploring Rural Community Dwellers' Values Regarding Acute Respiratory Infections: Connecting Providers to Evidence-Based Practice."

Assistant Professor **Mariah Tanner Ehmke** (Department of Agricultural and Applied Economics), Morgan, and Larson-Meyer have completed their pilot study "Building a Holistic Understanding of Childhood Overweight and Obesity: Incorporating Family Economic Behavior, Parenting Styles, and Health Attitudes and Behavior." Economic modeling was done and focus groups were conducted to allow a larger project to be developed.

Extension educator **Suzy Pelican** continues to be funded for "Dining with Diabetes," one of the focus areas of the Nutrition and Food Safety Initiative Team. **Mary Kay Wardlaw**, director of the Cent$ible Nutrition Program, recently received the first three-year funded grant and the largest amount of funding ever received ($4.37 million), a testament to the nationally recognized program (see related story Page 10).

Professor Don Jarvis

Molecular Biology

Professor Don Jarvis received four new grants in 2007 totaling approximately $3.5 million.

These grants from the National Institutes of Health are for research on the production of a novel bird flu vaccine, genetically engineering silkworms, and basic studies of insect cell biochemistry. Jarvis was notified in November that at least one of these projects will be highlighted in the strategic plan being developed by the National Institute of General Medical Sciences.

The bird flu project involves a collaboration with scientists at Protein Sciences Inc. in Meriden, Connecticut, while the silkworm engineering projects involve collaborations with Professor **Randy Lewis** in the Department of Molecular Biol-

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ogy and Professor **Malcolm Fraser Jr.** of the University of Notre Dame.

Department Head and Associate Professor **Mark Stayton** says, "Don is internationally recognized for his expertise in protein glycosylation. He has extensive experience in the production of these proteins in genetically engineered insect cells grown in Petri dishes."

Stayton adds, "In two of these newly funded studies, Don is extending his work from cells in culture to genetically engineered insects, in particular silkworms. These projects are wonderfully collaborative and provide many opportunities for undergraduate and graduate research."

Jarvis says his team's research focuses on engineering biochemical pathways in insect cells and insects to produce recombinant glycoproteins.

"Half of all proteins produced by higher organisms are modified by the addition of carbohydrate side chains, and cells need complex biochemical pathways to manufacture these glycoproteins," Jarvis says.

He emphasizes that many glycoproteins have direct biomedical applications as vaccines (like the flu vaccine), diagnostic testing reagents, and/or therapeutic drugs.

"There are few, good systems that can be used to manufacture glycoproteins, and they are expensive," Jarvis says. "Insect systems can be engineered to produce glycoproteins at much lower cost and with a higher degree of safety."

Members of his team include research associate **Jared Aumiller** of Rock Springs, assistant research scientist **Kyle Chitty** of Casper, postdoctoral research associates **Vipin Deo** of India and **Alex Hillar** of Toronto, Canada, doctorate student **Christoph Geisler** from The Netherlands, and undergraduate **Richard Coles** from Casper

Senior Lecturer Dave Wilson

Plant Sciences

The integrated production of cattle and forage is a large part of Wyoming agriculture, but there are other ways in which animal and plant production can go together.

Senior Lecturer **Dave Wilson** and graduate student **Nate Storey** of Grand Junction, Colorado, are experimenting with integrated production of tilapia fish and hydroponically grown vegetables in College of Agriculture greenhouses.

The fish grow in a modified stock tank from which the water is circulated through hydroponic vegetable trays. Plants in the trays extract fish waste from the water for their growth, purifying the water before it returns to the fish tank. The circulation pump is powered by a small solar panel, which makes the system suitable for installation on open land in rural areas.

An added benefit of this system is the large water volume of the stock tank acts as a thermal mass to stabilize greenhouse temperatures.

Wilson's project will provide estimates of the costs and practicality of integrated tilapia and vegetable production in a greenhouse system. The demand for locally grown food is increasing in many parts of Wyoming and in adjacent states. Adding fresh fish to local markets could allow Wyoming landowners to improve their bottom line.

Help has arrived for the ag college greenhouses. The proliferation of federally funded research projects in the greenhouses has placed a growing strain on greenhouse staff. To meet this challenge, **Jennifer Schomp** has been hired as a temporary research associate in charge of horticulture. Schomp is a master's graduate of the Department of Renewable Resources. She brings greenhouse experience and a scientific perspective to meet the horticultural challenges of operating a greenhouse at high altitude.

Assistant Professor Jay Norton

Renewable Resources

When Assistant Professor and Extension Soil Fertility Specialist **Jay Norton** started work in the renewable resources department in 2006, Wyoming agricul-

tural producers faced skyrocketing nitrogen fertilizer costs, and the cheapest and easiest-to-use formulation – ammonium nitrate – had disappeared from the market because of its potential use as an explosive.

Producers had many questions about economical alternatives to ammonium nitrate and how to effectively apply nitrogen products such as urea, urea ammonium nitrate, and several new time-release products.

Working with Powell Research and Extension Center (PREC) Director **Abdel Mesbah**, PREC Farm Manager **Mike Killen**, and Big Horn Basin Extension Educator **Sandra Frost**, Norton designed an experiment to compare five different nitrogen fertilizer products at two different rates and several different application techniques on a sugar beet crop at the PREC.

While soil and plant samples from last summer are being analyzed in Norton's UW Soil Resource Laboratory, the research team is planning next summer to chase nitrogen missing from the sugar beet cropping systems. To optimize yields, Big Horn Basin producers typically need to apply more than twice as much nitrogen as the crop requires, says Norton. This means more than half the nitrogen applied is being lost to the atmosphere or to runoff and leaching. The average price of nitrogen fertilizer more than doubled since 2000 and continues to rise with the price of natural gas used in its production. Understanding nitrogen dynamics in Big Horn Basin cropping systems is the first step in reducing expensive losses, notes Norton.

Associate Professor Todd Cornish

Veterinary Sciences

The Department of Veterinary Sciences was well represented at the 2007 annual meeting of the American Association of Veterinary Laboratory Diagnosticians October 18-24 in Reno, Nevada.

Associate Professor and Department Head **Donald Montgomery** says "congratulations are in order" for **Todd Cornish**, associate professor and pathologist, and colleagues who received the Best Manuscript of the Year award from the association. The article appeared in the March 2005 edition of the *Journal of Veterinary Diagnostic Investigation* (http://jvdi.org/cgi/reprint/17/2/110).

The study compared various laboratory methods to identify cattle persistently infected with bovine viral diarrhea virus, a common cause of infertility, abortion, and other problems in beef cattle in the western United States.

The study was a critical assessment of how well these tests work and the extent to which an animal's laboratory results change as they mature, Montgomery says.

Cornish's coauthors were Department of Veterinary Sciences laboratory technicians **Jackie Cavender, Joan Edwards,** and **Paula Jaeger**, Professor **Donal O'Toole**, former department virologist **Alberto van Olphen**, former laboratory technician **Leslie Vieyra**, former department head **Lynn Woodard**, and veterinarian **Dan Miller** of Cloud Peak Veterinary Services in Worland.

Representing the department at the meeting were Cornish, Montgomery, Cavender, Edwards, faculty members **Ana Bratanich, Ken Mills**, and **Merl Raisbeck**, senior research associate **Jean Jewell**, technical staff members **Rebecca Ashley, Amy Boerger-Fields, Carol Hearne**, and **Roger Siemion**, graduate students **Dave Edmunds, Amanda Fluegel**, and **Becky Dailey**, and undergraduate student **Daniel Siltman**.

"The group combined for a total of seven presentations covering topics important to wildlife and livestock in Wyoming," Montgomery says.

Topics included plague in mountain lions, mineralization of the brain in horses, comparative toxicity of tumbleweed shield lichen (the putative cause of elk deaths in 2004 near Rawlins), chronic wasting disease, abortions due to *Brucella abortus* strain RB51 vaccination in cattle, diagnosis of bovine viral diarrhea virus infections, and intestinal calicivirus infection in cattle.

PROGRAM NOTES

Associate Dean Jim Wangberg

Academic and Student Programs

Brand of Excellence festivities attracted a full house October 26 at the Crane Hill banquet room as the College of Agriculture honored scholarship recipients and donors.

The banquet gives administrators and faculty and staff members the opportunity to congratulate College of Agriculture students on their outstanding achievements. Each student was recognized on stage by Associate Dean **Jim Wangberg**, director of the Office of Academic and Student Programs.

This special event also gives the College of Agriculture the chance to thank the college's friends who provide the ability to offer financial support to the students. The Brand of Excellence program continues to grow, currently awarding more than 200 student scholarships exceeding $346,000 annually.

"The College of Agriculture is committed to making a UW education accessible to all qualified students," Wangberg says. "The strength of our scholarship program helps to attract the finest, most diverse students and to assist those who cannot meet the increasing costs of education."

Scholarships have become an important factor in the College of Agriculture's recruitment and retention goals. "We continue to attract the best and the brightest students," Wangberg says.

The scholarship application for 2008-09 is available on the College of Agriculture's Academic and Student Programs Web page at http://uwadmnweb.uwyo.edu/agPROGRAMS/. Click on the Scholarships link on the upper right hand of the page.

The Brand of Excellence scholarship program and annual banquet are coordinated by the Office of Academic and Student Programs. The office includes Wangberg; **Kelly Wiseman**, staff assistant; **Laurie Bonini**, recruitment coordinator; **Teresa Jacobs-Castano**, counselor; and **Stephanie Russell**, office assistant.

Dallen Smith

Cooperative Extension Service

Dallen Smith began July 27 in Greybull as the area extension educator for Profitable and Sustainable Agricultural Systems with emphasis on livestock and public land management. The position has responsibility for educational programs in Big Horn, Park, Washakie, and Hot Springs counties. Smith has a bachelor's degree in agribusiness and business and a master's degree in agriculture systems technology, both from Utah State University (USU). Prior to coming to the University of Wyoming, Smith worked four years for USU Extension as the agriculture water quality coordinator.

Juliet Daniels joined the Laramie County extension staff September 5 as the area educator for community development education. Daniels has a master's degree in agricultural economics from UW in 1997 and is a1992 graduate with a bachelor's degree in agricultural business from Colorado State University. This position covers Goshen, Laramie, and Platte counties. The Community Development Education initiative team works with individuals and groups in leadership and board development, mediation and conflict resolution, communication, and personal finance.

Susan Parker, former 4-H youth extension educator in Carbon County, moved November 1 to the grants coordinator position based on campus in Laramie. Parker will be responsible for training and assisting educators and initiative teams in identifying and securing external funds. Parker, who has worked for CES since 2005, obtained a bachelor's degree in business administration from Georgia State University in 1999 and a master's degree in forest resources/environmental education from the University of Georgia in Athens in 2005.

Professor Jim Krall

Agricultural Experiment Station

As he traveled the state this fall, **Stephen D. Miller,** Agricultural Experiment Station director and associate dean, says he was reminded why Wyoming is such a wonderful, beautiful, and diverse state to live in, "and why it is so important the college's research efforts provide unbiased information for managing the conflicts and challenges facing agriculture and the rural communities."

The AES competitive grants program received 20 new research proposals this fall that ranged in topics from cellulosic biomass production to characterizing myostatin divergence in ruminants, Miller says. "The AES will be able to fully fund only five of these excellent proposals. A strong internal and external review panel has been established, and awards were scheduled to be announced."

In late August, AES hosted a renaming ceremony at Lingle to change the name of SAREC to the James C. Hageman Sustainable Agricultural Research and Extension Center. "More than 190 people were in attendance for this ceremony, including many dignitaries from the University of Wyoming and a number of members from the Hageman family," says Miller.

In addition, the center has seen several personnel changes this fall with Professor **Jim Krall**, a cropping systems agronomist, being named research director, and the transfer of Associate Professor **Steve Paisley**, a livestock extension specialist, from Laramie to the center. An architectural firm has been hired and plans are well underway for construction of a state-of-the-art wet lab and dormitory facility at the site.

Other activities at research and extension centers around the state include early planning for the transfer of seed cleaning facilities from Sheridan to Powell, recruiting a new agronomic specialist at Powell, a livestock specialist at Laramie, and a native species reclamation horticulturalist at Sheridan. The position at Sheridan is unique and will be shared with Sheridan College.

"We encourage anyone who is interested to drop by and visit our research facilities at Laramie, Lingle, Sheridan, and Powell," notes Miller.

Anne Leonard

Ag Development and College Relations

In October, the college recognized student scholarship recipients and the people who sponsor these awards. Many honor faculty members who made a difference – **Alan Beetle**, **Harold Alley**, **Andrew Vanvig**, **Conrad Kercher**, and **Don Statton** are familiar names to many, says **Anne Leonard**, director, Ag Development and College Relations.

Another respected faculty member was the late **Robert Lang**. He was the youngest of a large family and grew up on a farm outside Cheyenne. The first one of his family to attend college, he started out in the College of Engineering but switched to agriculture when offered a scholarship in the college. After completing his education, Lang joined the plant sciences department and served as department head during the 1970s. He worked closely with many in the college, including the late Professor Emeritus **Gordon Kearl** in the agricultural and applied economics department.

This past fall, Kearl established a new scholarship to honor Lang. The Robert Lang Graduate Fellowship will help support graduate students working on research projects at the James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle. During their careers, both Kearl and Lang helped the agricultural industry through work conducted at extension centers and test plots throughout Wyoming.

Kearl completed the paperwork for this new endowment shortly before his death October 18.

"Student scholarships and fellowships are important tools to help current and future agriculture students and a fitting way to remember those faculty members who make a difference to our students and our industry. When called for the UW annual fund drive this winter, consider making a gift in honor of that special faculty member," Leonard says.

If you wish to make a contribution in memory of Lang or Kearl, please send your gift for either the Robert Lang Graduate Fellowship or the Gordon Kearl Scholarship Fund to College of Agriculture Development Office, 1000 E. University Ave., MS 3354, Laramie, WY 82071.

Assistant Professor Kenji Sato dies unexpectedly

Kenji Sato, an assistant professor in the Department of Veterinary Sciences, died unexpectedly November 11 while playing tennis. He was 48.

Sato developed the University of Wyoming's first course in veterinary epidemiology. He taught that course and also worked in the Wyoming State Veterinary Laboratory (WSVL). He was hired in mid-2005 as the department's first epidemiologist specifically trained in that discipline.

"Kenji was very personable and well liked by his colleagues," says Associate Professor Don Montgomery, head of the veterinary sciences department and director of the WSVL.

"Dr. Sato was devoted to making his epidemiology course a success for students across a variety of majors. His efforts were certainly appreciated by all of his students, and,

Kenji Sato

in visiting with his students after his death, they are all feeling his loss," Montgomery says.

Sato earned a doctorate in veterinary epidemiology from Michigan State University in East Lansing, Michigan. His master's degree in preventative veterinary medicine was from the University of California-Davis, and he earned a doctor of veterinary medicine from Yamaguchi University in his home country of Japan.

Sato worked for the Food and Agriculture Organization of the United Nations for six years. Most of that time was in Southeast Asia, where he helped farmers in Vietnam, Cambodia, Laos, China, and the Philippines better use locally available feed resources for sustainable livestock production.

He also helped villagers develop water resources and harness methane from manure for a renewable energy source for cooking stoves.

While serving in the Peace Corps in Paraguay, South America, he met his future wife, Hiroko Suzuki. He is survived by his wife and their son, Remo.

Memorial contributions may be made to the Kenji Sato Scholarship Fund, care of Wyoming State Bank, 3430 E. Grand Ave., Laramie, WY 82070.

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