

AG NEWS

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Dear Friends and Colleagues,

The College of Agriculture Dean's Advisory Board met this spring at the Sheridan Research and Extension Center (SREC) between Sheridan and the small ranching community of Wyarano.

SREC is dedicated to horticulture and working with restoration/reclamation issues. We met the day after the annual Wyoming Stock Growers Association ranch stewardship tour of the beautiful Golden Willow Ranch near Wyarano owned and operated by the Paul and Catherine Kukowski family.

Visiting the ranch and SREC and listening to board members, I was impressed by the importance of reclamation and restoration of disturbed land to producers and the general public.

The Wyoming Restoration and Reclamation Center (WRRC) is an interdisciplinary University of Wyoming program headquartered in the College of Agriculture. The university is recognized nationwide for efforts to restore disturbed land and water resources. Our center is focused on ways to enhance semi-arid rangeland by examining soil/vegetation relationships and soil microbial roles in successfully establishing new seedings, and mulching to conserve soil moisture, to name a few efforts.

Students studying restoration ecology will understand the ecology and technology so they will be better prepared for jobs in the reclamation/restoration industry and with regulatory agencies. The extension/service component of WRRC (partly through UW Cooperative Extension Service county educators) works with clientele around the state and region to deliver this information.

Research will assess water quality, impacts on rangeland vegetation, and other factors related to energy-produced water, such as water being pumped to the surface from coal seams to release methane gas. Other water-related research will find ways to improve water quality for use by domestic livestock and wildlife. Restoration of coal-bed methane byproduct wetlands, if successful, will have enormous values for livestock grazing, wildlife habitat, and ranch recreation.

The WRRC will provide more research-based information to use in developing applied management practices to suppress and control the invasion, establishment, and proliferation of invasive weeds.

Other areas related to the efforts of the WRRC that stand to benefit communities include insect control, drought management, and development of riparian and other habitat areas.

Although energy-related impacts to environmental issues are in the spotlight, a number of other non-energy reclamation and restoration issues need attention in the state and across the West (for example, drought-damaged range and impacts from development).

With fall comes our annual opportunity to thank outstanding alums, contributors, and collaborators of our college. In this issue, you will read about outstanding alums Tom Davidson and Linda Melcher and our Legacy Award winner Violet Dinwiddie. This year's outstanding partner is the Wyoming County Commissioners Association. You will also read about exciting research projects being done with sheep and corn, and a project studying wasps in South America.

I hope to see many of you this fall. 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/>.



Dean Frank Galey

Dean Frank Galey
College of Agriculture

"Do you want my one-word secret of happiness? It's growth – mental, financial, you name it."

Harold S. Geneen

FIRST CUT

Rochelle Chair receives research, alumnus honors

A reproductive biology professor in the College of Agriculture had honors multiplying this year.

Stephen Ford, professor and Rochelle Chair in the Department of Animal Science and director of UW's Center for the Study of Fetal Programming, received the Donald H. Barron Award from the University of Florida for research and received a distinguished alumnus honor from the animal science department at Oregon State University (OSU).

The Donald H. Barron Award, presented March 21, is given in recognition of outstanding research and scholarly activities in the field of reproductive biology and is named after a highly regarded reproductive biologist who was a faculty member at the University of Florida.

"I was very flattered to receive it," says Ford, who joined the UW animal science department in 2001. "It was gratifying to have my life and research career compared to Dr. Barron's. He is one of the best examples of how groundbreaking animal physiology research can cross agriculture, medical, and veterinary boundaries."



Professor Steve Ford garnered a research honor from the University of Florida and a distinguished alumnus award from Oregon State University.

Ford presented a lecture about his epigenetics research efforts at UW and speculated the research (changes in the phenotype or appearance of an organism without corresponding changes in its genotype) may have led to the award. Ford and his research team studied the effects of environmental and nutritional effects on the placental and fetal development in two groups of sheep that descended from a common flock (see related story on page 11).

He presented the research at the 67th Scientific Sessions of the American Diabetes Association June 22-26 in Chicago.

Ford received his alumnus honor April 27. He was also inducted into the Withycombe Club, named after the first head of the animal husbandry department at OSU, James Withycombe, who went on to become experiment station director and was elected governor of Oregon in November 1914.

Ford received his bachelor's degree from OSU in 1971, his master's from the University of West Virginia in 1973, and his doctorate from OSU in 1977. Ford served as a research physiologist at the U.S. Department of Agriculture's Agricultural Research Service Roman L. Hruska U.S. Meat Animal Research Center in Clay Center, Nebraska. In 1979, he accepted an associate professorship in the Department of Animal Science at Iowa State University and, in 1985, advanced to professor.

Ford has served as major professor for 11 doctorate students and is still active in graduate student training.

"My greatest gratification is to see how successful the students are in their research careers and in training their own students for a career in research," Ford says.

UW Powell Research and Extension Center director retires

Alan Gray, director of the University of Wyoming Powell Research and Extension (R&E) Center and a professor in the Department of Plant Sciences, retired May 18.

Gray sustained serious injuries during an accident at the center July 27, 2005, and has been recuperating.

"The time has finally come to say good-bye," he stated in a letter to friends and colleagues. "There is so much to be thankful for and really not enough words to express my appreciation to all of you who have made my tenure at the Powell R&E Center so fulfilling and successful. Be assured, my job would have been impossible if not for you."

Gray received his bachelor's degree in botany from Fort Hays State University in 1969, his master's in range science from Utah State University in 1975, and his doctorate in agronomy from the University of Nebraska in 1980. Gray became the Powell R&E Center director in 1997 and had been a forage extension specialist in the College of Agriculture's De-

T I N G



Alan Gray

partment of Plant Sciences. He had worked in Riverton.

Gray was struck down and knocked unconscious while mowing an alfalfa test plot at the R&E center north of town. He was operating a flail harvester when the rotating head of the machine caught a 3-inch piece of wire. The rusty wire shot through his left nostril, traveled at an upward angle, and passed into his brain. Because of his dramatic survival, Gray was the subject of a television documentary on medical marvels that aired on the *Discovery Health Channel* last summer.

Gray thanked several individuals for their help. He also expressed appreciation to the Powell R&E Advisory Board.

“Your unflagging support of the station’s many projects and programs allowed the center and me to

attain a measure of success,” he stated. “Your guidance made us relevant and responsive to the needs of the agriculture community. We grew and became stronger because of your tutelage.”

On the Web: <http://uwadmnweb.uwyo.edu/uw-expstn/Powell.asp>

Small Acreage Issue Team, *Barnyards & Backyards*, receive national awards

The Small Acreage Issue Team (SAIT), whose members include the University of Wyoming Cooperative Extension Service (UW CES), received two national awards during the National Association of County Agriculture Agents annual meeting July 16-19 in Grand Rapids, Michigan.



Dallas Mount, center, receives the association’s achievement award for Wyoming.

An individual team member, Dallas Mount, also won the association’s achievement award for Wyoming.

The team won the national communications award in the team newsletter category for the quarterly magazine *Barnyards&Backyards*. The team was also a finalist for the Search for Excellence in Extension Programming in the young, beginning, and small farms category.

Other team members are from the Wyoming natural resource and conservation districts, Resource Conservation and Development councils, Natural Resources Conservation Service, Wyoming State Forestry Division, Audubon Wyoming, weed and pest control districts, and others.

Representing the team at the conference were Lindsay Taylor, UW CES educa-



UW CES educators Lindsay Taylor (left) and Dallas Mount accepted the national communications award for the *Barnyards&Backyards* magazine.

tor for Campbell, Crook, and Weston counties, and Mount, educator for Goshen, Laramie, and Platte counties.

Mount received the achievement award for Wyoming, a peer recognition award for members with less than 10 years of service.

Taylor and Mount presented a poster on the *Barnyards&Backyards* publication and project at the meeting.

The purpose of the SAIT is to provide Wyoming landowners with information to sustainably manage their land. The team strives to help landowners maintain or improve the quality of life in Wyoming by raising healthier crops, landscapes, and animals, while protecting natural resources, such as water, soil, and plants.

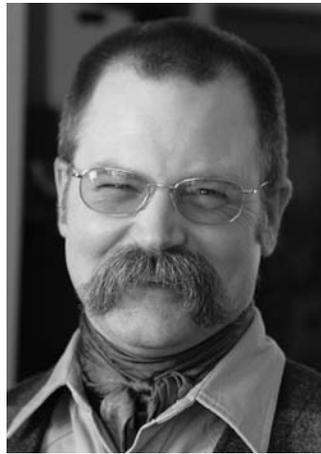
F I R S T C U T

Three present extension service rural families program in Ireland

University of Wyoming Cooperative Extension Service personnel presented components of “Enterprising Rural Families: Helping Families Manage Rural Enterprises for Success” in Ireland this summer.

Attending the 16th International Farm Management Congress at University College, Cork, Ireland, July 15-20, were extension human development specialist Randy Weigel, extension farm and ranch management specialist John Hewlett, and extension educator Bill Taylor of Weston County, specializing in ranch and business management, leadership, and enterprising rural families. The congress is held every two years.

Enterprising Rural Families: Making It Work™ provides rural families with tools and skills to deal with immediate challenges and build long-term resilience in their family business. The focus is on the needs, values, and vision of people in family busi-



John Hewlett

nesses and how the family enterprise affects them.

The program has two interactive courses contained on two CD-ROM disks, *Strategic Planning and Goal Setting* and *Resource Inventory*.

Enterprising Rural Families (ERF) was originally developed by Weigel, Hewlett, Taylor, Gail Gordon, former extension business development and resource management specialist, and associates from Australia and British Columbia, Canada. It started as an international, online credit and non-credit course for rural families in business. “We have since added a monthly electronic newsletter and the ERF CD-ROM instructional disks,” says Weigel, a professor in the Department of Family and Consumer Sciences. “Though not specifically

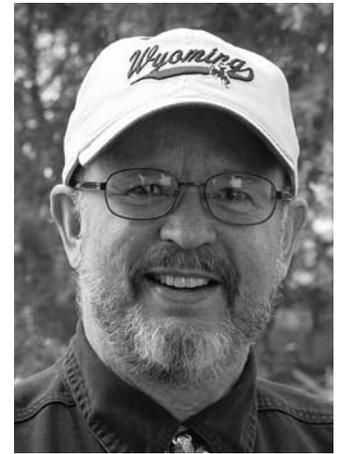


Bill Taylor

designed for agriculture, the concepts and content of ERF have direct relevance for ranch and farm families in business.”

Weigel, Hewlett, and colleague John Reeve of Rockhampton, Queensland, Australia, first unveiled the ERF online course at the 14th International Farm Management Congress in Perth, Australia. At about the same time, Taylor, Gordon, and Lorne Owen of British Columbia, presented ERF seminars to producers and rural families in Queensland, says Weigel.

“The strength of the congress is the integration of a diverse group of international people, companies, and organizations around the themes of agricultural production, agricultural policy, agribusiness, and



Randy Weigel

economics and their impact on farm management,” says Weigel.

The International Farm Management Association is a society of people involved directly or indirectly in the agricultural process and who have an interest in agriculture in other parts of the world than their own, according to its Web site. There are members in 50 countries.

More information on ERF is available at <http://eRuralfamilies.org>.

For more information about the congress, visit www.ifma16.org/html/home.htm.

T I N G



UW student farm furthers student education, community outreach

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

An idea sown last year for a student farm at UW came to fruition this spring with vegetable plants popping through the ground near the University of Wyoming's greenhouse.

The vegetable growing effort is an outreach to the community and helps further education of students in the agroecology program in the College of Agriculture, says Michael Baldwin, a junior majoring in agroecology from Fairfax, Virginia, and vice president of Agricultural Community Resources for Everyday Sustainability (ACRES). The first planting gets the project off the ground.

Outreach efforts will include providing vegetables to needy UW students and the community, teaching children about the food industry, and furthering the education of students in the agroecology program who might not have an agriculture background, notes Baldwin.

The one-third acre vegetable plot also shows the viability of sustainable agriculture, he says. "Farming is a diminishing entity. The small farms are pushed out by the corporate farms," Baldwin says. "Sustainable farming on a small plot of land shows the viability it can continue."

The idea sprouted in a conversation between Mary Huerter, who graduated in May with a bachelor's degree in agroecology, and Rik Smith, an assistant professor in the Department of Plant Sciences and who is the group's adviser. Huerter researched other student agriculture projects around the country last fall, but the idea took root when she was introduced to Alyssa Wechsler of Laramie, a zoology and physiology/environment and natural resources student, who had asked Smith questions about sustainable agriculture for a class project.

"We realized it was something of a shot in the dark," says Huerter, who is president of ACRES, "but believed drafting the proposal would help us solidify our daydreams about the project as well as define our limitations."

Meanwhile, land near the greenhouse was approved

for use by Stephen D. Miller, director of the Wyoming Agricultural Experiment Station and associate dean in the college.

A seminar this spring showed students wanted to make the project happen, says Huerter.

Students producing food is a major driver of the effort, says Smith. "I also think it's what has gotten them charged up. Here they have an opportunity to get their hands dirty and apply what they've learned in our agroecology and plant sciences classes."

The vegetable growing is more than just a project for Emmanuel Omondi of Kenya, East Africa, a master's

student in agroecology and director of a sustainable farming project in his hometown of Kitale in western Kenya.

"From my standpoint, what they are trying to do here is more than exploratory," says Omondi. "People are dying from hunger in my country. Ideas such as this one are what many small-scale farmers in Kenya are surviving on, literally. Small-scale farming drives the community. At home, community is everything, as people must learn to pool their resources to survive. Outreach involves reaching out to more communities and sharing with them alter-
(Continued on page 28)



From left, Michael Baldwin, vice president of Agricultural Community Resources for Everyday Sustainability, Emmanuel Omondi, a master's student in agroecology, and Assistant Professor Rik Smith check plants at the student farm vegetable plot.



Professor Scott Shaw during earlier parasitic wasp research in Central America.

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

There's no parallel in the human world for the goings on in the species-rich tropical forest in Ecuador.

Among lush branches, vines, and leaves, camouflage experts become unwitting prey for flying species that have adapted to poisons capable of killing other organisms. In air usually dripping with mist or rain, flying assassins seek out the camouflaged and lay eggs within unwitting hosts. Offspring

then hatch and munch away at the host.

Scott Shaw loves this stuff.

Supported by a National Science Foundation grant and with collaborators from Tulane University, Shaw, a professor in the Department of Renewable Resources specializing in insect biology and classification, and graduate student Drew Townsend are researching the mysteries of caterpillars and parasitic wasps. The relationship is being studied at the Yanayacu Biological Station and Center for Creative Studies on the eastern slopes of the Ecuadorian Andes. At 7,100 feet, the station encompasses nearly 5,000 acres of cloud forest and cattle pasture.

"It's a high-elevation cloud forest with mists rising from the forest, or it is raining," notes Shaw, who also studied parasitic wasps in Costa Rica. Shaw is curator of the University of Wyoming Insect Museum. "Yanayacu is a cool place to study. We have found many

new species, and I feel like we are just getting started."

Professor Lee Dyer and Grant Gentry, a post-doctorate researcher in Tulane University's Department of Ecology and Evolutionary Biology, were conducting research in Costa Rica the same time as Shaw. Dyer wanted to apply for a development grant to study three levels of ecological interaction: the plants, caterpillars, and those that feed on caterpillars – the parasitic wasps.

The grant was funded three years ago, and the group received word this spring the grant has been renewed.

"We picked the highlands of the Andes in eastern Ecuador because it is a hot spot for caterpillars and other organisms," notes Shaw. "There is a tremendous diversity of organisms – more than almost any other area along the equator."

Caterpillars are the key herbivores in the forest and are oblivious to the poisons in the plants they eat. The wasps are the primary biological control that keeps the caterpillar population in balance. "They are shaping the distribution and abundance of caterpillars and therefore the plants," says Shaw.

Yanayacu (<http://yanayacu.org/>) hosts researchers from around the world. Getting there is an adventure. "It's a remote area, difficult to get to," notes Shaw.

First-timers are given directions on the Web site. Get off the bus at Cosanga, and, if you want to make sure you're on the right path, ask for directions at the restaurant in the center of town, La Enmita, which is right next to the only gas station. You're about a mile's walk from the station.

There are two to three ecological employees working

Life and death at 7,100 feet

UW scientists study life dance between parasitic



Andrew Townsend, right, explains how a malaise trap is used to collect insects.

at the laboratory whose main function is setting up caterpillar rearing and the basic ecology.

Townsend has been there twice. “I’m extremely fortunate to have the opportunity I’ve been given,” the Mission, Texas, native says. “I love Ecuador, and when I tell people where I am studying, many are jealous. It’s one of the hot spots of diversity.”

Under Shaw’s tutelage, Townsend has standardized the caterpillar research. When research started, there was one plot. There are now 250 plots each 10 meters in diameter every 100 meters in altitude. Townsend and assistants determined the 30 plant groups common at various elevations. When five of the 30 genomes are found in a

circle, a plot is created. Plants are recorded, and every leaf of every plant is examined for caterpillars. Each plot takes about three hours to record.

“We have a huge amount of data,” says Townsend. “We are not only getting biological inventory but also the density of caterpillars by plant and elevations. They are big-time herbivores.”

The food plants of the caterpillars are largely unknown. “We are learning a tremendous amount,” he notes. “Caterpillar diets are specific to a narrow range of plants.”

They are also munching on plants that have become chemically defended. “They are toxic or distasteful and not fed on much by other animals,” says Shaw. “But some

insects have broken through that barrier. In a tropical cloud forest, caterpillars are the key group of herbivores on plants, and they are not eaten by frogs or birds. They get hammered by parasitic wasps. The wasps have broken through the chemical barrier and feed on the caterpillars.”

Caterpillars evolved their own defenses against other organisms – some have spines and some hairs that deter birds but not parasitic wasps.

Two types of wasps are targeted. *Meteorus* is a group already studied by Shaw, and Townsend is studying *Aleiodes*. *Meteorus* is easily recognized before it turns into an adult wasp. *Aleiodes* lays from one to 50 eggs inside a caterpillar and then mummifies its host.

The Yanayacu workers hang the caterpillars and plants in plastic bags on a clothesline inside an open shed. “We don’t know a heck of a lot more about the caterpillars than the wasps,” says Shaw. “We don’t know what the caterpillar will turn into, whether a butterfly or a moth. All caterpillars are photographed. If they are not parasitized, they are sent for categorization. The rates of parasitism are pretty high. We need 10 to 20 to get a few that emerge.”

In addition to finding new species, Shaw is attempting to theorize why some wasps lay one egg and another wasp lays many in their hosts.

“I have my suspicions,” he says. “The ones that attack the chemically defended caterpillars are solitary. It’s too risky to put lots of eggs in something potentially poisonous. It’s safer to put one egg in one caterpillar.”

Not so the gregarious wasps. “They attack either the really hairy or spiny caterpillars, good defenses against birds but inside they are probably OK to eat. It’s relatively safe for a wasp to put large numbers of eggs in large, hairy, or spiny caterpillars,” notes Shaw. 🐝



Andrew Townsend searches for a suitable caterpillar plot location.

Anne Sylvester faces

by Robert Waggener, Editor
*Office of Communications
and Technology*

Bright lights illuminate the University of Wyoming greenhouse complex late into the night.

It's cool outside, but inside the greenhouses is a Corn Belt-like environment for a "maze" of corn trials – hot, humid days and warm humid nights. It's the kind of environment where shirts quickly stick to skin.

Department of Molecular Biology Associate Professor Anne Sylvester has created a tiny Corn Belt in Laramie to carry out research that could one day help breeders develop better corn varieties and growers harvest higher-yielding crops.

Professor Jordanka Zlatanova, former chair of the Department of Molecular Biology, describes Sylvester's research as "cutting edge."

The research is centered on understanding the molecular mechanisms of growth, development, and function of organisms, including how corn leaves grow. Leaf development seems insignificant

until Sylvester explains that leaves are the most important source of carbohydrates in corn, and past genetics research has led to optimal shapes for maximum production. But there are many aspects of cell growth that can yet be manipulated to accommodate the growth of corn in changing climates and to test methods to optimize growth for biofuels production.



Department of Molecular Biology Associate Professor Anne Sylvester checks soil moisture in a University of Wyoming greenhouse where she is conducting corn research. The research could one day help breeders develop improved varieties of corn and growers harvest better crops.

Cells make up the leaves, and Sylvester's goal is to identify all the genes involved and then understand how genes, cells, and the growing environment interact to direct growth of corn plants. This information contributes to a larger body of knowledge that guides future breeding and engineering strategies, she says.

"My basic research is communicated to more applied researchers, who then translate the findings to practical outcomes for growers and breeders," she says. An example is how edible sweet corn was developed for humans from original, non-edible lines. The discovery of how starch is converted in corn kernels occurred at a university setting and intensified the breeding of diverse corn lines for human food and forage, Sylvester explains.

Since corn has remarkably similar genes and proteins as barley, oats, rice, and wheat, Sylvester says, understanding the genes in corn could have similar implications for breeders and growers working with closely related grain crops.

"The emerging genetics and molecular information

unleashes corn as the single most important model plant for all of agriculture," she emphasizes. "By knowing and understanding the genes in corn, the comparable versions of genes can be found and studied in the other grain crops."

Her work is already being noticed. Sylvester was elected to serve on the Maize Genetics Executive Committee to promote communication among researchers, breeders, and growers (www.maizegdb.org/mgec.php). She was also elected to chair the 49th annual Maize Genetics Conference earlier this year in St. Charles, Illinois (www.maizegdb.org/maize_meeting/2007/).

"The National Corn Growers Association was well represented at the conference, and they spoke to the maize researchers with a visionary, progressive understanding of the role for basic research in advancing agriculture," Sylvester says.

Corn – or maize, as geneticists call the plant – is a model genetic system both for agriculture and for researchers who want to identify genes and study their function in plants.

scientific 'maze' studying corn



Associate Professor Anne Sylvester displays some of the corn plants being used in her research to understand how genes, cells, and the growing environment interact to direct growth of corn.

“Corn plants are good experimental genetic systems, most significantly because of their ability to conduct controlled crosses where males and females can be mated at will,” Sylvester says.

She explains that male flowers are in the tassel of a corn plant, and they are separate from the female parts found in a developing ear on the stalk.

Researchers, like Sylvester, developing a particular

trait – say larger or more upright leaves – can select and breed for the trait readily by choosing the pollen from one plant of interest and crossing it with the developing ear of another plant.

Each developing ear has hundreds of individual eggs that can be fertilized by the pollen. A successful hand pollination results in a full ear with 200 to 300 kernels, each representing genetically related siblings, says Sylvester,

who analogizes, “It’s like 200 to 300 brothers and sisters with the same parents.”

She adds, “This creates a powerful tool for the geneticist who can develop and breed from carefully designed pedigrees. Even more important, the corn genome is slated to be sequenced by the end of 2008, meaning the DNA that codes for proteins making up the plant will be identified.”

The sequencing project,

for which Sylvester serves as an advisory board member, is being completed by the Washington University Genome Sequencing Center in St. Louis, Missouri, and is funded by the National Science Foundation (NSF), Department of Energy (DOE) and U.S. Department of Agriculture (USDA). For more information, go to www.maizegdb.org/sequencing_project.php.

The expected 50,000 genes being identified by the sequencing project are rapidly becoming available for researchers like Sylvester to exploit.

Sylvester has already discovered a gene family that normally functions to help cells in leaves grow normally. She named the gene “Warty” because of the unusual wart-like tumors that appear when leaf cells cannot stop growing due to an abnormality or mutation in the gene. Sylvester and co-workers went on to identify the gene sequence and related genes and proteins that function to control cell growth.

In addition to growing corn year-round in the UW greenhouses, Sylvester has two field seasons a year – one

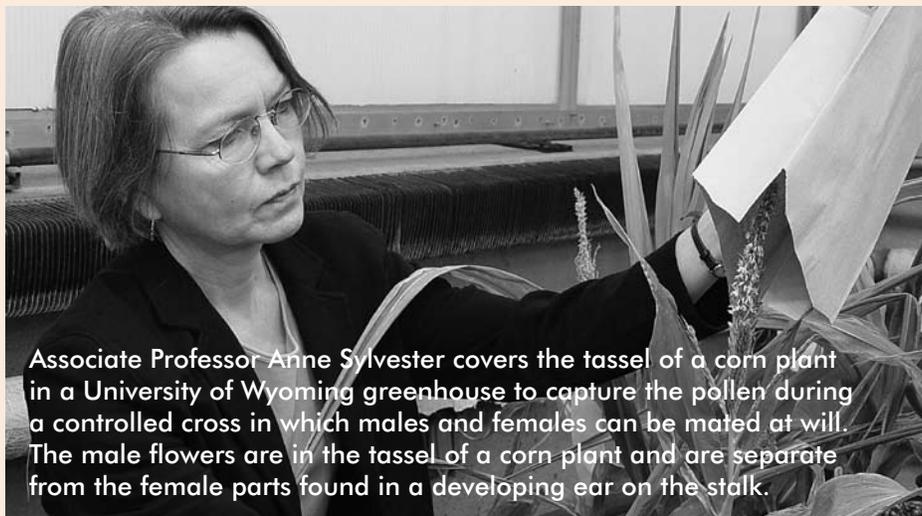
in the summer in Colorado and a second generation in the winter in Hawaii, where maize geneticists from throughout the country congregate to pollinate their winter nurseries. She hopes to make use of the new laboratory and housing facilities at the College of Agriculture's James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle next summer for pollinations in Wyoming.

She says critical renovations to the UW greenhouse complex are underway, which will allow Sylvester and other plant scientists to perform their research in better controlled conditions.

"Thanks to the hard work of Brad Williams, corn grows here for molecular study. But the facilities are being upgraded now to current greenhouse standards. These upgrades will keep research dollars here at UW rather than sending those dollars to Iowa State University, which currently handles my greenhouse seed production," Sylvester says. Williams, of the Department of Plant Sciences, is coordinator of greenhouse operations.

Sylvester has received grants from the USDA, DOE, and NSF to carry out her studies.

On the Web: https://uwacadweb.uwyo.edu/uw-molecbio/Faculty/A_Sylvester.asp 🍷



Associate Professor Anne Sylvester covers the tassel of a corn plant in a University of Wyoming greenhouse to capture the pollen during a controlled cross in which males and females can be mated at will. The male flowers are in the tassel of a corn plant and are separate from the female parts found in a developing ear on the stalk.

The personal side of Anne Sylvester's academia

Stories showcasing cutting-edge research by faculty members rarely share a personal side. But indeed there is a personal side to each story, and being successful at both requires an act of balance.

Department of Molecular Biology Associate Professor Anne Sylvester and her husband, Associate Professor Stephen Herbert, head of the Department of Plant Sciences, have two daughters, Amy and Lisa.

"Our family has worked together to balance the demands of two careers while enjoying a shared love of music and cultural activities," Anne says. "Both Amy and Lisa are string players with the Wyoming String Academy, and they enjoy the many opportunities Laramie offers including tennis, cross-country skiing, and karate."

In 1999, the family moved to Laramie from Moscow, Idaho, where Anne and Steve were faculty members in the University of Idaho's Department of Biological Sciences.

They met in the early 1980s as graduate students at the University of Washington in Seattle, where Anne earned bachelor's, master's, and doctorate degrees and where she began her pursuit of understanding how cells grow.

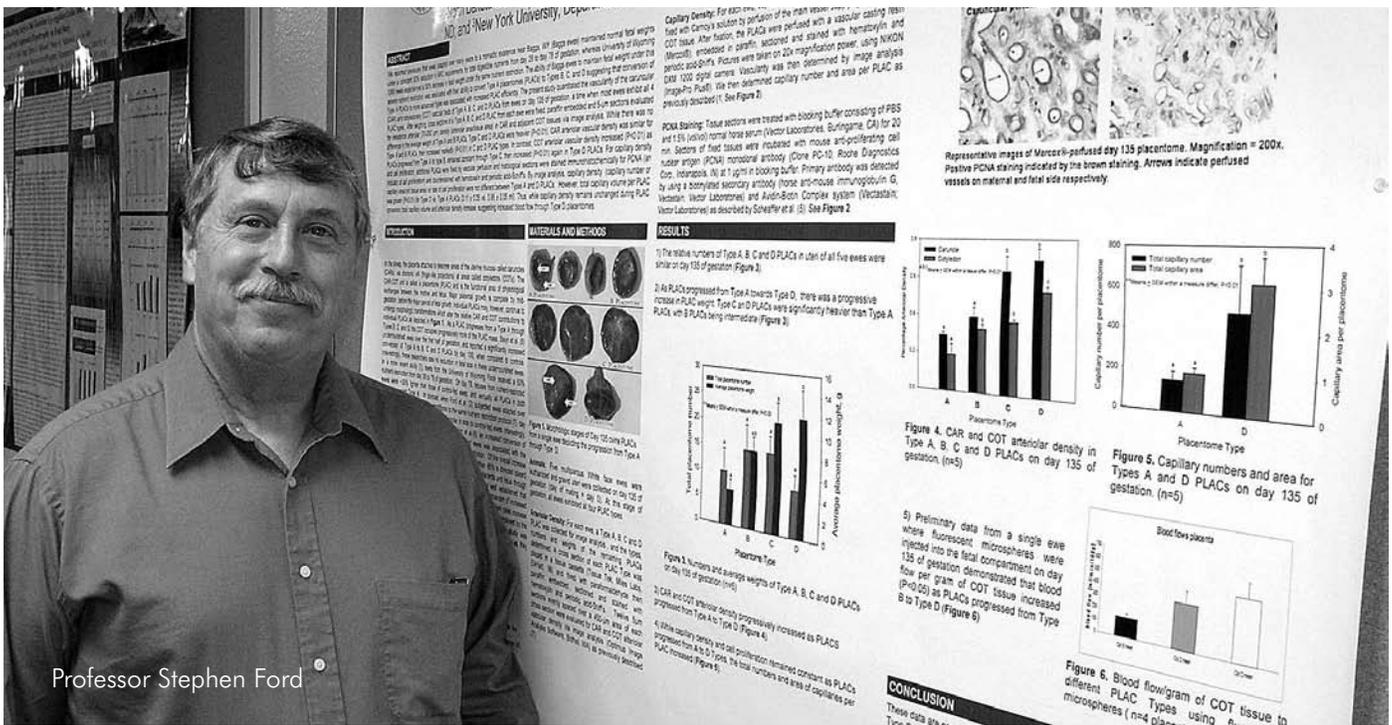
During her postdoctoral research at Stanford University and the University of California, Berkeley, Anne became fascinated with corn genetics.

That interest grew stronger when the couple moved to Laramie to join the faculty of the Department of Botany in the College of Arts and Sciences. She worked in botany until 2006, when she joined the molecular biology faculty in the College of Agriculture.

"My move to the Department of Molecular Biology was consistent with my research interests in that department, which focuses on understanding molecular mechanisms of growth, development, and function of diverse organisms," she says. "The department has added corn genetics to its repertoire of research activities."

She says that balancing professional goals and commitments with personal life has always been important, and often the two things intermingle.

"In Laramie, the university, the city, the schools, and many individuals have given our family a deep appreciation of the value of a rich community life," she says.



Professor Stephen Ford

Professor studies how environment changes phenotypes of animals

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

A connection between Dutch mothers suffering malnutrition and deprivation imposed by German forces during World War II and a flock of University of Wyoming sheep today might seem improbable

But not impossible as recent findings suggest.

Stephen Ford, professor and Rochelle Chair in the Department of Animal Science and director of UW's Center for the Study of Fetal Programming, is researching how environmental conditions can change the phenotype of an animal (physical characteristics) without affecting its genetic makeup

(i.e. genome), by a process called epigenetics.

Every cell in the body has the same genetic information; what makes cells, tissues, and organs different is that different sets of genes are turned on and expressed by a process called epigenetic modification. Scientists now believe epigenetic alterations in gene expression can be caused by environmental changes in utero, which can have life-long impacts on an animal's phenotype.

"Genetic makeup is not the whole story," says Ford in his office in the Animal Science/Molecular Biology building while sitting under a wooden pig with wings suspended from his office ceiling. "A transgenic pig," he quips.

Science never left the California boy, whose father had built missile guidance systems, tired of engineering and quit his job, moved his family to Oregon, and began farming.

"We were like the *Bev-erly Hillbillies*," Ford reflects. "We bought a farm, and we became quite successful."

They experimented with what animals were most successful to raise, consulting neighbors and books for proper methods of management. (See related story about Ford's career track on page 2).

While a professor at Iowa State University, Ford transferred embryos in swine to discover the uterine and embryonic factors that controlled embryo growth,

survival, and litter size. One phenotype was placed into the uterus of another. "I found the uterine environment changed the growth and development of the embryo," says Ford. That eventually led to his interest in epigenetics.

During World War II, a group of pregnant women in the Netherlands living under starvation conditions throughout gestation gave birth to relatively small babies. Those children, who were raised in much better conditions, later gave birth to unexpectedly small babies. Something had caused a multigenerational change in the size of the women's offspring. Further, if women were undernourished only during the first half of gestation, babies

were born at a normal weight, but the babies had a greater incidence of obesity and cardiovascular disease in later life than the offspring of women receiving adequate nutrition throughout gestation.

When Ford became director of UW's Center for the Study of Fetal Programming in 2002, he found a possible model for epigenetics in ewes originally maintained at UW and then split into two flocks

and subjected to markedly different environments and production systems.

"I decided if epigenetics really exists, that these two flocks of sheep should be phenotypically different," says Ford. "They live in completely different environments. The Baggs sheep are in the Red Desert and receive no supplements, tended by Basque shepherders. At UW, the sheep get all they want to eat,

are used for production of lambs and wool, and are exceedingly well-cared for."

Ford set out to investigate if ewe selection over several generations under markedly different management systems/environments could change the impact of a bout of maternal nutrient restriction on fetal growth, as well as postpartum health, growth efficiency, and carcass quality of their offspring.

Four- to 5-year old multiparous (experienced two or three lambings prior to the study) Rambouillet/Columbia-cross ewes of similar breeding, size, and body weight were selected from the two flocks that were descendants of the common UW flock approximately 30 years before.

The first flock near Baggs was adapted over 30 years to a nomadic existence, traveling approximately 250 miles a year to graze a land mass that ranged from desert terrain to high mountain pastures with limited nutrition and limited nutritional supplementation throughout the year.

The second flock was maintained for approximately 30 years by UW and, in contrast to the Baggs ewes, had a relatively sedentary lifestyle and consumed a diet from birth that always met or exceeded requirements.

When Baggs ewes were subjected to a 50 percent nutrient restriction from day 28 to 78 of gestation (gestation is approximately 150 days), they maintained fetal weights and

fetal blood nutrient concentrations (glucose and amino acids) at levels exhibited by fetuses of ewes fed to 100 percent requirements through day 78 of gestation.

In contrast, the UW ewes exhibited a dramatic 30 percent decrease in fetal weight, in association with marked decreases in glucose and amino acid concentrations in their blood when compared to fetuses from UW ewes fed to 100 percent requirement.

In association to this intra-uterine growth retardation, fetuses from nutrient-restricted UW ewes exhibited enlarged hearts, sub-functional kidneys, decreased pancreatic weights, and reduced skeletal muscle mass when compared to fetuses from UW ewes fed to 100 percent requirements.

The ability of nutrient-restricted Baggs ewes to maintain normal fetal weights in the face of a bout of severe maternal nutrient restriction was a result of a marked increase in placentomal size, shape, and vascularity, which resulted in an increased capacity to transfer nutrients from the maternal to fetal blood stream, according to Ford.

There are between 50 to 90 individual placentomes attaching the placenta of a sheep to the uterine wall, and these placentomes exchange nutrients from mother to fetus. In contrast, nutrient-restricted UW ewes failed to increase the size, shape, or vascularity of their placentomes and thus placentomal nutrient uptake and fetal growth declined in



Members of the fetal programming group are, front, left to right: Bob Shade and Xing Li Wang, faculty members, Southwest Foundation for Biomedical Research, San Antonio, Texas; Carissa Bamford, University of Wyoming master's student, Tod Hansen, faculty member, Colorado State University.

Second row, Angela Grant, UW research technician, Cun Li, faculty member, Center for Pregnancy and Newborn Research, University of Texas Health Sciences Center, San Antonio, Matthias Loele, a postdoctoral researcher, University of Jena, Germany.

Third row, Karen Moore, staff member, Center for Pregnancy and Newborn Research, University of Texas Health Sciences Center, San Antonio, Kim Vonnahme, UW Ph.D. candidate, Sue Jenkins, staff member, Center for Pregnancy and Newborn Research, University of Texas Health Sciences Center, San Antonio, Jeff Gilbert, UW Ph.D. candidate.

Fourth row, Mark Nijland, faculty member, Center for Pregnancy and Newborn Research, University of Texas Health Sciences Center, San Antonio, Stephen Ford, professor and Rochelle Chair in the Department of Animal Science and director of UW's Center for the Study of Fetal Programming.

the face of maternal nutrient deficiency, says Ford.

“Thus, placentomal genes had been turned on and off by nutrient restriction in the Baggs ewes but not the UW ewes, causing them to grow and become more efficient in nutrient transport,” says Ford. The altered phenotype of the Baggs ewes would allow normal fetal development in the face of chronic maternal undernutrition, a situation not uncommon in their production environment, he says.

Researchers then increased 100 percent diet requirements from day 79 to lambing. See story below for details.

The center’s research has human implications. A significant number of women give birth to infants who experience intra-uterine growth retardation (IUGR). These offspring experience an increased incidence of obesity, type 2 diabetes, and cardiovascular disease in later life, says Ford.

“As type 2 diabetes is increasing at an alarming rate in children and young adults in the U.S., one wonders if a significant cause may be maternal diet,” says Ford. “If we can find the specific genes turned on or off in the placenta to make it more efficient in nutrient transport, we may be able to prevent

IUGR and thus health problems in the resulting offspring.”

Recently, Ford and his collaborators developed a sheep model of maternal obesity, and they are studying its impact on fetal growth and development as well as offspring health, growth efficiency, and carcass quality.

“This is an important model, in that maternal obesity is increasing progressively in women in all developed countries and has been implicated in the increasing obesity of offspring,” notes Ford.

On the Web: <http://uwadmnweb.uwyo.edu/FE-TALPROGRAMMING/> 🐑



Sheep confinement facilities at the UW livestock farm.

Stresses causes changes between UW sheep groups; none in Baggs groups

To test if the different placental phenotypes exhibited by Baggs and University of Wyoming ewes in response to maternal 50 percent nutrient restriction differentially affected their offspring, diets of nutrient-restricted Baggs and UW ewes were increased to 100 percent requirements from day 79 to lambing.

No differences were noted in the size, viability, or birth weights of lambs born to either nutrient-restricted or adequately fed Baggs and UW ewes. At 2 months of age, male and female lambs born to nutrient-restricted UW ewes exhibited greater baseline blood levels of glucose and insulin than compared to UW ewes fed 100 percent requirements, or lambs from nutrient restricted and adequately fed Baggs ewes, says Stephen Ford, professor and Rochelle Chair in the Department of Animal Science.

Nutrient-restricted UW lambs were also insulin resistant (insulin did not efficiently place glucose in body cells) when compared to the other groups. By 8 months of age, lambs from nutrient-restricted UW ewes again showed elevated baseline glucose in their blood but exhibited a marked reduction in insulin release in response to increased blood glucose suggesting pancreatic failure. Insulin resistance followed by pancreatic failure are warning signs of approaching type 2 diabetes and are associated with obesity and hypertension in humans, notes Ford.

“Interestingly, lambs from nutrient-restricted UW ewes ate more, grew faster, were fatter, and had markedly higher blood

pressures at 8 months of age than lambs from adequately fed UW ewes,” says Ford. “We observed no differences in postpartum growth rate, obesity, insulin sensitivity, or pancreatic function between lambs from nutrient restricted and adequately fed Baggs ewes.”

At slaughter on day 280, lambs from nutrient-restricted UW ewes were heavier and exhibited increased hot carcass weight, subcutaneous (under the skin) fat thickness, and kidney-pelvic fat weight than adequately fed UW lambs, while exhibiting a significant reduction in skeletal muscle mass, says Ford.

No differences were observed in carcass measurements or composition between lambs from nutrient-restricted and adequately fed Baggs ewes.

“Thus, it appears an epigenetic change may have occurred in the Baggs ewes over 30 years of selection, which allowed them to produce normal, healthy offspring in the face of prolonged bouts of maternal nutrient deficiency,” says Ford. “These data are exciting because they indicate the phenotype of a ruminant animal can be altered independent of its genotype (genetic makeup) during a few generations of selection under specific management systems and environments. This would help explain the ability of a wide variety of animal species to rapidly adapt to markedly different environments by altering their phenotypes to increase success in that environment.”

AG APPRECIATION

The College of Agriculture's outstanding alumni, research/outreach partner, and legacy winners for 2007 will be honored October 5 and 6 as part of Ag Appreciation Weekend, a celebration of the importance of agriculture to Wyoming's history, culture, and economy.

Linda Melcher, former director of the University of Wyoming Cooperative Extension Service (UW CES) Cent\$ible Nutrition Program and now a nutritionist with the U.S. Department of Agriculture's Food and Nutrition Service's Southwest Regional Office in Dallas, Texas, and Tom Davidson, retired Midwest manager of *Good Housekeeping* magazine, will be honored as outstanding alumna and alumnus respectively.

Violet Dinwiddie, an Albany County native, is recipient of the Legacy Award.

The Wyoming County Commissioners Association is the recipient of the Research/Outreach Partner of the Year award for its work as a partner with the UW CES.

The schedule includes:

October 5

- Dean's Ag Appreciation Dinner honoring Melcher, Davidson, Dinwiddie, and the Wyoming County Commissioners Association. Those wishing to attend may make reservations by contacting the College of Agriculture Development and College Relations Office at (307) 766-3372.

October 6

- 25th annual Ag Appreciation Day Barbecue, 10 a.m.-noon, Tailgate Park.
- University of Wyoming versus Texas Christian University football game – noon.

Tickets for the barbecue can be purchased at the event or before September 28 from the Office of Academic and Student Programs at (307) 766-4034. Food for the barbecue is provided by Wyoming producers with animal science department student organizations preparing the meal. Proceeds provide scholarships for College of Agriculture students and help fund various agriculture college student organizations. For a group rate on Ag Appreciation Weekend football tickets, purchase them online at wyomingathletics.com. Click on Tickets on the left hand column, click on Football, click on the Click Here to Purchase Wyoming Tickets, and click on GROUP TICKETS in left hand column. The sign-in ID is AGDAY. The Password is POKES.

County commissioners

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

Without the collective contributions by county government, the University of Wyoming Cooperative Extension Service would be without staff, funding for operations, and offices to provide services to citizens.

In honor of that support, the Wyoming County Commissioners Association (WCCA) has been selected the College of Agriculture's 2007 Research/Outreach Partner of the Year. The association will be honored during Ag Appreciation Weekend October 5-6 in Laramie.

Counties are part of the cooperative partnership trio, along with the U.S. Department of Agriculture and UW.

"Each of the partners is important, but the county government contributions are critical to the success of cooperative extension," says Glen Whipple, UW CES director and associate dean in the college. "As the

elected leaders of county government, the county commissioners are literally the college's partners in the extension enterprise."

Kent Connelly, Lincoln County Board of County Commissioners chairman and president of the WCCA, says he is pleased the association received the award.

He views CES services vital to Wyoming citizens. "We are very happy the award came our way," he notes. "It reflects the efforts we are putting forth and the direction the county commissioners are going. In our commissioner meetings, we have a group trying to protect our Wyoming lifestyle. We have a lot of farmers and ranchers on county commissions, and we represent that very loudly."

Bill Glanz, Washakie County commissioner, entrepreneur, and former rancher, is in his 15th year as commissioner. "It's great to be recognized," he says. "We've worked hard trying to get things to work well with the extension service.

WEEKEND

association receives outreach partner award

I don't know if the relationship has ever been better."

That hasn't always been so. The creation of an extension advisory committee within the WCCA several years ago seems a turning point. "At least once a year, if not more, the committee meets with Glen Whipple or another person from the CES about events, if there are problems around the state, or what could be done to make it better or how extension can be improved," says Glanz. "Since that happened, we don't hear anything at our state meetings, not like it used to be."

Connelly says the difficulties arose from Wyoming growing up as a state. "Twenty-five years ago, we were agriculture and now we are a mineral-based state," he says. "How do you adjust and work with CES and use its resources?"

County government provides funds, space, and equipment support to the CES. Total annual funding is almost \$3 million in fiscal year 2007, up almost 73 percent from 1998. Counties provide 31 percent of the funding for

UW CES. The figures do not include county-owned office space, notes Whipple.

Collectively, county commissioners provide 26 extension office locations, housing 142 CES educators and staff members, Whipple wrote in his nomination letter.

Counties also provide clerical and secretarial support to county operations. Each county has at least one county-provided clerical/secretarial support person. Many counties have two or more.

There's more. Counties provide:

- funding for travel, professional development, office supplies, and other support for extension field operations.
- funding for half of the 4-H/youth development educators in 21 of 23 counties.
- partner direction and input on local and state extension issues.



Kent Connelly



"I know locally and statewide people use the extension service," says Glanz. "I've used the extension service and university as much as anyone else. I've started several businesses, and I've needed and received help through CES. If someone needs help, local extension will help if they can, and, if not, they will find it somewhere."

"In our little county here, we have about 200 kids in 4-H," says Glanz. "We have a lot of people grown up now who were in the program and are local residents."

4-H is the largest non-school program for youths in Wyoming, with more than

8,000 youths participating. 4-H is the youth arm of CES, and its state offices are in the College of Agriculture.

Connelly says Lincoln County's support of CES is reflected by moving and housing CES in two new community center buildings – one in Kemmerer and one in Afton.

"The job our extension offices are doing can best be described by our commitment to build both the Afton (CES) office and the Kemmerer office a new set of facilities that serve the public with better access in the new events centers," he says. "They will be housed each in a multi-million dollar facility with great exposure."

Connelly places a high regard on 4-H. The county is also building a barn at the rodeo grounds so urban youths can have 4-H animal projects. "4-H teaches kids the work ethic, that's one I believe is missing in our kids today," he says.

He notes Lincoln County Fair numbers have grown the past four years. "There is a new awareness we are missing something as a community for our youths," Connelly says. 🍁

AG APPRECIATION

Alumnus award winner grew up with UW

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

A trip to California as a young teacher was to pivot a Laramie native's life and fling him from a Pinedale classroom to eventually be named one of the top 100 advertising sales representatives in the United States.

Tom Davidson, a College of Agriculture Outstanding Alumnus award recipient this year, says as a young man he never could have imagined the life he and his wife, Ann, of Rock Springs, have had.

"When in Pinedale teaching school, if someone would have walked up to me and told me someday I would be the Midwest manager of *Good Housekeeping* magazine in Chicago, you would imagine what my thoughts would have been," says Davidson, who retired in 2001.

He graduated from UW with a bachelor's degree in science & agricultural education in 1961, attending on a four-year track scholarship and lettering in basketball as a freshman.

Graduation didn't end his involvement with UW. He is:

- A current member of the College of Agriculture Dean's Advisory Board
- A current Ag Scholarship donor
- A member of the College of Business Advisory Council.
- A Former member of *UWyo* magazine advisory board
- A former member of the UW Foundation Board
- A former member of the Alumni Association Board
- An emeritus former member of the UW Art Museum National Advisory Board.

Davidson, who lives in Wisconsin, is a former student of Professor Emeritus Connie Kercher in the Department of Animal Science, who nominated him for the alumnus honor. Kercher has known

Davidson's entire family. "His dad was our shepherd at the UW farm," notes Kercher. "I knew his mother, and I had his older brother in class. Tom is certainly deserving of recognition for his loyal and long-

time support for the college."

University involvement after graduation runs the gamut from those who don't care to someone like Davidson, says Kercher. "I'm pleased to know him and his wife and support Tom for this award," he says.

Davidson is enthusiastic about the College of Agriculture's outpouring of information to residents. "The amount of information the college and extension service is providing to help producers in the state is phenomenal," he says. "That excites me."

He pointed out *Barnyards & Backyards* magazine that is produced to assist small-acreage owners in the state, and *Reflections* magazine, which showcases research throughout the college.

Davidson grew up with

UW. His father, Jim, was shepherd for 36 years at the old university Stock Farm, which at that time was at the territorial prison.

"Butch Cassidy was at the prison two years, and they

have a picture of him there. I was there 18 and don't have one," Davidson quips.

He doesn't make light of the alumnus award. "My father being with the university as long as he was, my parents would really be proud of me," he says. "I'm honored. I think they would be proud of what is taking place."

The Davidsons created the James M. and Blanche Davidson Scholarship in his parents' honor.

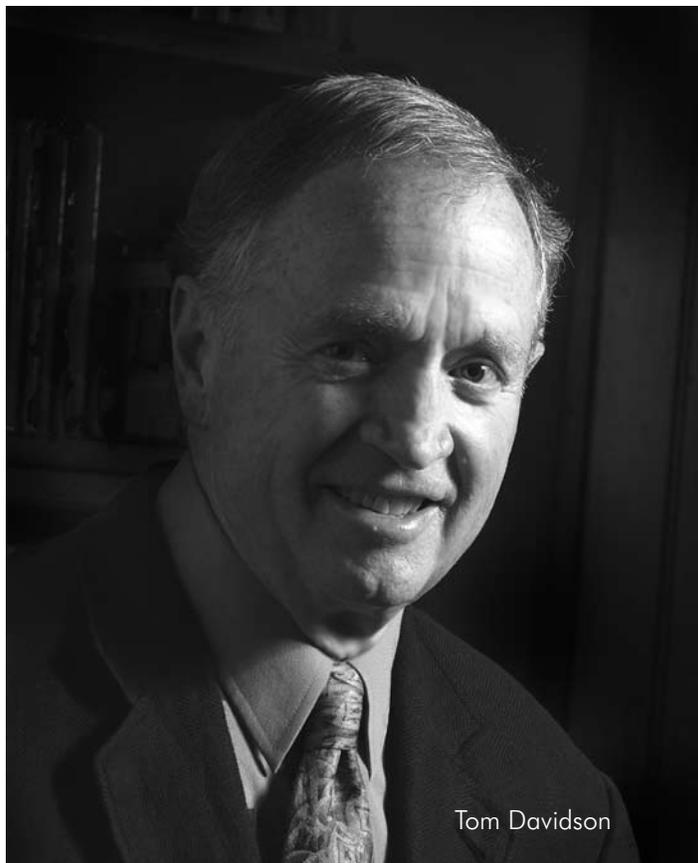
Davidson's life was to take a life-changing curve while teaching at Pinedale. As a young teacher, Davidson traveled to Bakersfield, California, to see a dairy farm at a local FFA chapter. While there, he observed a California FFA magazine that encouraged him to start a similar magazine in Wyoming. "That's how I got

into advertising," he says.

After two years, he got a call from the National FFA headquarters in Washington, D.C., asking if he would consider working in its advertising department. "The money was

outstanding alumnus

WEEKEND



‘wow, let’s do this. We can always come back,’ ” he recalls. “That led to everything else that has happened to me.”

He was approached a year to the date after his start at National FFA by Swift and Co. to join its public relations arm. Within eight months, the company was restructured and his job was eliminated. He decided to return to advertising and joined *Progressive Farmer* and *Southern Living* magazines.

He would become an advertising sales representa-

tive for *Successful Farming* and *Better Homes & Gardens* magazines, and later Midwest manager for *Good Housekeeping* magazine. Davidson doesn’t take credit for his success and noted several people who have helped him.

His farm background and time at UW was to serve him well. “It allowed me to accomplish what happened in my advertising career,” he says. “I knew enough about agriculture that, when calling on companies like Deere and Co., they knew I had an agriculture

background. A lot of times we didn’t talk advertising, but agriculture. In some cases, I was advising some of the people I was calling on. It gave me confidence to talk to anyone about agriculture.”

Jack Allen of Laramie, who wrote a letter of support for Davidson’s nomination, believes his friend’s personal characteristics have contributed to his success. “Tom is sincere, honest, focused, persistent, personable, and reasonable,” notes Allen, who taught physical education at Pinedale when Davidson was teaching agriculture. “He is a people person who listens to others and works well in any setting. He is respectful of others and has a great sense of humor.”

Ann says her husband is a born salesman, even selling pots and pans to help get through college. “He’s persistent,” Ann says. “To his advantage and disadvantage, he personalizes his goals. They don’t just become a goal for the college, but become his goals. He doesn’t like no. And he’s definitely a people person. It has been a great ride for us.”

He’s helped UW in many ways. As a young boy feeding stock at the UW farm, Davidson recalls one morning climbing atop the Cowboy Joe mascot pony and being tossed straight in the air.

As an adult, Davidson learned the College of Agriculture was solely responsible for the university mascot. Upon learning the University of Illinois and Notre Dame mascots received full-ride scholarships, “I thought, ‘why not get a \$500 scholarship each for the handlers and also offset the care of the pony and apparel for handlers?’ I contacted alumni and had no problem at all. We are in the fourth year of handling this program through the Cowboy Joe Club. This year, Cowboy fans are also buying a trailer for the mascot, which will have the names of the handlers on it plus those promoting the pony.”

Allen says Davidson has continued loyalty and concern for the success and growth of the university in the athletic and academic areas. “He is a major financial contributor to the university,” notes Allen. “No time of year is too inconvenient for Tom to come to Laramie for meetings, sports events, or to accompany his wife, who is president of the UW Art Museum National Advisory Board.”

Notes Allen, “He has actively stayed in touch with his many university friends throughout the years. He loves the University of Wyoming.” 🍷

AG APPRECIATION

Melcher's work while at College of Agri

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

Not many have their life exactly the way they want it when they want it.

Linda Melcher, a College of Agriculture Outstanding Alumnus recipient this year, does.

The 27-year UW employee – 25 of those with the Cooperative Extension Service – calls her time at UW a great ride. Her reputation born from establishing the Cent\$ible Nutrition Program (CNP) in the Department of Family and Consumer Sciences ultimately led her away in 2005 to a nutritionist position with the U.S. Department of Agriculture's (USDA) Food and Nutrition Service in Dallas, Texas.

The UW program helps thousands, and Melcher still gets tears when she reads comments from residents helped by the program.

She won't take credit for the successes. "Everything I did was as a team," she explains. "I won't take credit

for accomplishments, but what I will take credit for is assembling good teams. I'm a great catalyst. I would find out what people needed to do their jobs better, get it, and get out of the way and let them do their jobs. That's my whole management philosophy."

Melcher received her undergraduate degree in home economics education in 1969 from the University of Northern Colorado. She taught one semester in a public school in Dallas. Pregnancy caused her to quit. School policy did not permit a teacher to be pregnant and teach, and she eventually returned to Laramie and

started as a bookkeeper at UW in 1978.

"It was a fluke I got the job in 1980," she recalls. "I just came up here (College of Agriculture) to see if I was eligible for the job that was advertised. I knew nothing about

nutrition when I started the program. It took about five minutes to figure out I needed to get my master's."

She oversaw the USDA's Expanded Food and Nutrition Education Program in three counties, a program that eventually spread to every Wyoming county. "I could see very early on this program had great potential to help people and make a difference in their lives," she says. "I got entrenched in the extension mission and the extension family. Somehow, I just couldn't leave. It was a great ride."

Still, there came a time when she knew she had to leave. "People say you know it's time to leave," says

Melcher. "I had been feeling it was time to leave for a while, but, when I became eligible to retire, I wasn't ready. Then an opportunity came along and the floodgates opened and my current job fell into my lap. When things like that happen,

you know it's time. I felt I had given CNP everything I had to give."

She says she needed to leave the program so her replacement did not feel there was someone looking over his or her shoulders.

Mary Kay Wardlaw, who had been serving as an education specialist, was that person. Wardlaw says Melcher inspires others to do their best work by encouraging creativity, new ideas, and excellence.

"Linda is able to look to the future and see how to make things better," says Wardlaw. "I learned many things from her, including how to support employees

outstanding alumnus

and base administrative decisions on what is best for the organization. Linda cares deeply about those who provide nutrition education through the CNP and the participants involved. She has always been an advocate

WEEKEND

culture continues to change lives



Linda Melcher

for those who have limited resources.”

Suzy Pelican, extension food and nutrition specialist in the Department of Family and Consumer Sciences, says Melcher is honest, hardworking, and a person of vision.

“I am not alone in my praise and admiration for Linda,” she says, and shared comments from Sylvia Moore, program director, Wyoming WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) Medical Education and a 1992 out-

standing College of Agriculture alumnus: “Linda Melcher seamlessly interweaves her passion for her discipline and her concern for the welfare of others. She has an unflagging commitment to helping people learn how to afford tasty, nutritious, and safe food. She brings a genuine respect and warmth to her professional and personal relationships – balanced with refreshing candor and humor...”

Melcher’s early days in the program were an education into a slice of Wyoming life not acknowledged by many – Wyoming residents struggling to meet daily needs. She recalls a visit to a resident with an educator to recruit people for the CNP program. “A woman looked at me and said, ‘Listen lady, I can’t even afford to keep them from being hungry. What makes you think I can afford to give them good nutrition?’”

There were no lesson plans for educators when she started. Turnover was high. “We just started fixing things,” she notes. “And it just evolved.”

She reels off a number of names of people she says are responsible for her success, and she also notes her husband, Bob. “My whole career wouldn’t have been possible if he hadn’t been supportive of me,” she says. “I suppose a lot of people say that, but I don’t know how many husbands put up with their wife gone three-quarters of the time. I really need to give him credit for who I am.”

Bob retired from Union Pacific Railroad and lives in Laramie, and Linda has a long-distance commute.

So, why does she think she’s got it made?

She says she has a great job, a place in Dallas, grandkids in Houston and Laramie, and a husband who supports her life, works four 10-hour days, and has four-day weekends every other week, “and I fly home to see my grandsons and husband in Laramie,” she says. “How much better could it be?” 🍷

AG APPRECIATION

Legacy Award winner has deep roots in Laramie Valley

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

This year's College of Agriculture Legacy Award winner was born in the Laramie Valley 23 years after the founding of the university, attended UW, married a college alumnus, and ranched near Laramie.

Now living in Arizona, Violet Dinwiddie – mentally nimble at 98 – believes the mission of the college is important. She created a charitable trust in 1998 to fund a scholarship for a student, and in 2004 she established another to support the research and outreach programs in diseases shared between livestock and wildlife.

"I was always interested in agriculture, and my father was very interested in the university," says Violet, who lives in an assisted facility in Tucson. "I knew he would like to make a donation, and I was interested in the ag department. I felt it was a must. I think we need research in agriculture."

Violet was born in Laramie to Oda and Mamie Mason and raised on her parent's ranch on Sand Creek about 18 miles south of Laramie.

"I was an only child, and we were pretty well out there," she says. "I was raised to ride I guess. I was with my dad a lot. I went to a school out there three years and rode horseback the three miles. Dad sold the ranch, thinking he would retire at 45, and we moved to Long Beach, California. We were there one year and moved back to Laramie, where he bought the ranch he retired on."

That was near Centennial.

She was in the fifth grade when the family moved to California. "I was scared to death when I thought about California, but I got settled," she recalls. "I was glad to get back to Laramie because, I suppose, I had friends here and Mom and Dad seemed happier here. I enjoyed California, but it wasn't my cup of tea, even as a little girl."

John Clay of Cheyenne was raised on an adjacent ranch and has known her 70 years. Since Violet is unable to travel to Laramie to receive the award due to health reasons, Clay will accept on her behalf.

"I appreciate her so much as a friend," says Clay, a member of the College of Agriculture Dean's Advisory Board and an emeritus member of



Violet Dinwiddie

the UW Foundation. "She is so deserving of the award."

Violet lived with her mother in a house in Laramie while attending UW, returning to the ranch on weekends. While at UW, Violet met Jack Dinwiddie, a College of Agriculture student from Texas and a member of the UW Livestock Judging Team. He graduated in 1928. After their wedding, he took her home to the Texas Panhandle for five years.

"After we got hailed out and 'droughted' out," says Violet, "we moved back to Wyoming and went into ranching with my mother and father raising purebred Herefords at their ranch near Centennial."

They ranched there until

1968, when her parents sold the ranch and Violet and Jack built a house on the east side of Sheep Mountain near Centennial. They remained there until 20 years ago, when they moved to Tubac, Arizona, where they built a house and lived there in the winter and near Laramie in the summer.

Jack died in 1986. She moved into the assisted living facility a year ago.

"I didn't want to move, but I didn't want to drive anymore," she says. "I keep busy with my dog and read a lot. I have very few friends alive who are my age. I didn't plan on being this age!"

That doesn't prevent her from socializing. Clay says Violet has always been vivacious. "She's always been an outgoing person," he notes. "She's one of those people who loves entertaining her friends and having people around her. Up until last year, she had friends she's known for 50 years stay at her home for four or five days. She loves people."

Says Violet, "I keep busy and I walk as much as I can. I still have lots of company through the year, which is great." 🍷

legacy award



Lisa Colson

Hopes high for UW extension educator's efforts in Wamsutter

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

There has been more than one classic novel set in Wyoming in which someone coming to town changes everything.

Lisa Colson would probably be embarrassed to compare her cross-country trek from Missouri to Wamsutter with fictional characters like “The Virginian” or “Shane,” but many hope her community development efforts in this energy-rich and infrastructure-poor town may be just as exciting.

Brown hair framing her face and highlighting blue-green eyes, personable and confident, Colson is responsible for marshalling forces to transform this here-and-there, now-and-then town into a bona fide community

— replete with houses and year-round residents

This is the birth of a community, says Colson, who likes the challenge. “I like to implement, be creative,” she adds. “I like the satisfaction of completing projects, and there is a lot for me to accomplish. I don’t like to be stagnant. This is a lot of fun.”

Mobile homes and fifth-wheel trailers south of Interstate 80 make this south-central Wyoming town of 1,000 about 40 miles west of Rawlins bulge at sagebrush seams. The town expanded from 260 to about 1,000 in four years, and the population is expected to balloon to 6,000 in the next 10 years.

Colson arrived last November. Hired by the University of Wyoming Cooperative Extension Service

(UW CES), she holds a position that is a collaborative partnership between UW CES, Sweetwater County, and Anadarko Petroleum Corporation, BP America, Devon Energy Corporation, Hyland Enterprises Inc., and Love’s Travel Shop.

Colson’s charge is assisting the mayor and town council in managing development projects. She said her work has been nonstop: there are water and sewer lines to get installed, breaking ground for a housing development, taking the pulse of the medical needs in the community and enticing businesses to locate to Wamsutter.

The mayor acknowledges her efforts. “Lisa has worked very hard to become a part of the community,” notes Rich Freudenberg, the principal at Desert Elemen-

tary. “She is doing a great job for the town. We are very fortunate to have her here.”

Colson spent the last seven years working for the Green Hills Regional Planning Commission in Trenton, Missouri, as a developer and research and development specialist. Living about a quarter-mile from where she was born, she began looking at job opportunities such as in Bellingham, Washington, and Durham, North Carolina, and she wondered how she would adapt to living in a metro area.

Then she heard about Wamsutter.

“This is more me,” said Colson. “I had the desire to work with one community long-term, make more of an impact, and gain a sense of accomplishment. I could see how much potential is here.” 🍷

PROGRAM NOTES

Agricultural and Applied Economics

Dannele Peck, an assistant professor in the Department of Agricultural and Applied Economics, was the keynote speaker at the Women in Science (WIS) Conference May 8 at the University of Wyoming.

The conference, hosted by the Wyoming NASA Space Grant Consortium, attracted 320 junior and senior high school girls from across Wyoming. It is designed to provide girls hands-on experiences in science, mathematics, and technology to encourage them to pursue training and careers in these fields.

Becca Freeburn, **Tabby Christner**, and **Ryan McConnaughey**, who graduated last spring, were finalists for UW's top student awards.

Freeburn and Christner were among 10 finalists for the Rosemarie Martha Spitaleri Award for the outstanding graduating woman.

McConnaughey was among three finalists for the Tobin Memorial Award for the outstanding graduating man.

Freeburn, of Fort Laramie, earned a bachelor's degree in agricultural business. Her adviser was **Mariah Tanner Ehmke**, an assistant professor in the Department



Dannele Peck

of Agricultural and Applied Economics.

Christner, of Wauneta, Nebraska, earned a bachelor's degree in agroecology. She was advised by **Dave Wilson**, an associate lecturer in the Department of Plant Sciences.

McConnaughey, of Riverton, earned a bachelor's degree in agricultural economics. His adviser was **Ed Bradley**, an associate professor in agricultural and applied economics.

Colter Floy of Laramie, who earned an agricultural business degree in 2006, has started a welding and fabrication business called Custom Fabrication. Floy's business and marketing plans were based on classes he took with Bradley and Tanner Ehmke. His adviser was **Alan Schroeder**, an associate professor in agricultural and applied economics.

Animal Science

Meat science doctorate student **Keith Underwood** won first place in the American Meat Science Association's (AMSA) Graduate Student Research Poster Competition. The national contest was in June at the AMSA Reciprocal Meat Conference in Brookings, South Dakota.

Underwood, who is advised by Assistant Professor **Min Du**, won the doctor of philosophy division for his poster focusing on muscle growth and fat tissue in cattle. This division included seven competitors.

Underwood, who won \$200 and a plaque, says he hopes his research allows producers to increase marbling and muscle growth in beef cattle. This could result in higher quality-grade cattle with enhanced cutability, which could lead to more profitable cattle, says Professor **Doug Hixon**, head of the Department of Animal Science

Underwood, of Shallowater, Texas, earned a bachelor's degree in animal science from Texas Tech University in Lubbock, Texas, in 2002, and a master's degree in animal science from the University of Wyoming un-



Keith Underwood

der the direction of Associate Professor **Warrie Means**.

Platt Price of Malad, Idaho, and **Rena Stohrer** of Buffalo placed first and third, respectively, in the graduate competition papers at the Western Section, American Society of Animal Science (WSASAS) meeting in June in Moscow, Idaho.

They are working on master's degrees in animal nutrition. Price's adviser is Associate Professor **Bret Hess**, and Stohrer's adviser is Associate Professor **Paul Ludden**.

Price, Stohrer, and the other 13 competitors were evaluated on written manuscripts and oral presentations. With Price and Stohrer placing in the top three, UW earned the 2007 Institutional Award for the fourth time in five years.

The Institutional Award includes a \$2,000 stipend to be used by UW animal science graduate students to help cover travel expenses for future WSASAS meetings.

Family and Consumer Sciences

The Department of Family and Consumer Sciences continued to focus on international experiences this summer, says **Karen Williams**, professor and head of the department.

University of Wyoming Cooperative Extension Service (UW CES) specialist and department Professor **Randy Weigel**, UW CES specialist **John Hewlett** in the Department of Agricultural and Applied Economics, and UW CES Educator **Bill Taylor** of Weston County have developed two interactive courses contained on CD-ROM disks: *Strategic Planning and Goal Setting* and *Resource Inventory*. They presented these courses at the 16th International Farm Management Congress, University College, Cork, Ireland, July 15-20. The Enterprising Rural Families™ (ERF) CD instructional disks are part of a group of ERF materials that also include an



Randy Weigel

on-line course and monthly electronic newsletter.

Associate Professor **Sonya Meyer** took 20 individuals to London, Paris, and Scotland in May. The Fashion Study Tour continues to broaden student understanding of textile production, design, merchandising, and historic clothing. New portions of this year's trip included a stop to Heriot-Watt University's Textile College in Galashiels, Scotland, and a tour of the Lochcarron textiles facilities in Selkirk, Scotland, to see their cashmere and tartan manufacturing processes. Accompanying the group was **Donna Beth Downer**, current College of Agriculture Advisory Board member and former department head of family and consumer sciences.

Molecular Biology

Associate Professor **Mark Stayton** in August became the new department chair of molecular biology. Stayton, who will serve a three-year appointment, replaces Professor **Jordanka Zlatanova**, who will now spend more time on research.

"I am excited about this new challenge. Molecular biology has a lot to offer to the College of Agriculture, and I would like to be a part of that," Stayton says. "We can fruitfully collaborate with almost every department in the college, and I would like to see that pursued more diligently."

For example, Stayton says, Associate Professor **David Fay** and his research team are using nematodes to study issues related to cancer and reproductive biology.

"Nematodes are a significant agricultural pest in Wyoming, especially with sugar beet production. It would be nice to take advantage of David's recognized expertise to study and apply nematode research to other areas in the College of Agriculture," Stayton says.

Another example is brisket disease research being conducted by the Stayton team in collaboration with an animal science team headed by Professor **Rich McCormick**.



Mark Stayton

Brisket disease is a form of altitude sickness in cattle.

"Brisket disease has implications for human health, and our research could tie into the research of other departments," Stayton says.

The brisket disease research was prompted by Professor **Doug Hixon**, head of the Department of Animal Science. "It was a wonderful suggestion," Stayton says.

Stayton started as an assistant professor in molecular biology in 1987. In addition to his research on brisket disease, he and his team have actively been researching heart attacks in mice from a molecular level, working in collaboration with **McCormick** and **D. Paul Thomas**, an associate dean and professor in the Department of Kinesiology and Health.

PROGRAM NOTES

Plant Sciences

Extension horticulture specialist **Karen Panter** and graduate student **Maureen Veniegas** have erected a horticultural “high tunnel” in Laramie at the College of Agriculture greenhouse with support from a UW Faculty Grant-in-Aid.

High tunnels are minimalist greenhouses: simple, metal-framed structures covered with transparent plastic and having no environmental controls. High tunnels are used to grow high-value produce in regions with short or unpredictable growing seasons.

“A high tunnel’s purpose is solely season-extension – earlier in the spring and later in the fall,” says Panter. “There is no electricity, fuel, heating, etc. – only natural ventilation for cooling. Water will come from spigots attached to the main greenhouse range.”

Panter’s experiments will compare the growth, yield, and physiological condition of peppers, strawberries, and other vegetable crops when grown in the field with those in the greenhouse and in the newly constructed high tunnel, says Associate Professor **Steve Herbert**, head of the plant sciences department.

Greenhouses may be used to produce high-value



Karen Panter

vegetable crops in any climate, but the capital and operating costs of greenhouses put them out of reach for many small landowners.

“High tunnels offer a low-cost option for producing vegetables on small acreages in the harsh Wyoming climate,” Herbert says. “The demand for locally grown produce is increasing in many parts of Wyoming and in adjacent states. Low-cost, energy-efficient, high tunnel technology will allow Wyoming landowners to profit by meeting this demand.”

Alan Gray, professor and director of the Powell Research and Extension Center, has retired from UW. Gray is an expert in forage production and a staunch advocate for Wyoming agriculture. His contribution to the Department of Plant Sciences will be missed, notes Herbert.

Renewable Resources

Members of the Department of Renewable Resources have been involved with the water quality training program for Wyoming Association of Conservation Districts (WACD) since 2004.

The training program is directed by Assistant Professor **Ginger Paige**; collaborators on the project include professors **Quentin Skinner** and **K.J. Reddy** and doctoral student **Mickey Patterson**. Since 2005, six trainings have been conducted with more than 80 attendees.

The U.S. Environmental Protection Agency established criteria to evaluate water quality conditions to determine beneficial use attainment. Under the Clean Water Act, water quality management decisions are to be watershed-based.

Wyoming has recognized the most successful watershed and water quality programs are locally initiated and implemented. In 1996, WACD, along with state and federal partners, established the “Locally Led and Initiated Watershed Efforts Program.”

A viable water quality monitoring program and collection of quality data are



Ginger Paige

dependent upon proper use of suitable methods, well-defined standards, services and equipment, trained and qualified personnel, effective planning, and quality assurance and control.

The goal of this training and certification program is to ensure district personnel are well-trained to collect high-quality data and the data are used. The data must be viewed as credible, which means they are documented and defensible, notes Paige. A credible water quality monitoring program depends on procedures that control errors and make analyses more accurate and precise.

The WACD Water Quality Monitoring Training Program was first established in 1998 in cooperation with the University of Wyoming Department of Renewable Resources and Coopera-

tive Extension Service, U.S. Department of Agriculture Natural Resources Conservation Service, Wyoming Department of Agriculture, and Wyoming Department of Environmental Quality. As of 2001, 10 trainings had been conducted with more than 200 participants attending.

In 2004-2005, UW revised the water quality training program and developed the certification program for WACD personnel. The training was streamlined and reduced into three modules: 1) overview of watershed hydrology and water quality; 2) design and implementation of a water quality monitoring program; and 3) field methods and data analysis and interpretation.

Anyone interested in attending or participating in the training program can contact Paige at gpaige@uwyo.edu.

Veterinary Sciences

Associate Professor

Donald Montgomery is the new head of the Department of Veterinary Sciences and director of the Wyoming State Veterinary Laboratory (WSVL).

He replaces Professor **Donal O'Toole**, who finished his five-year appoint-



Donald Montgomery

ment as department head and WSVL director in August. O'Toole is now spending more time on diagnostic pathology and research.

Montgomery says he is looking forward to his new challenge. "I enjoy providing a service to our clientele and helping them to manage disease processes with their animals. I bring 25 years of experience in the diagnosis of animal disease problems."

He also brings administrative experience to his new job as Montgomery was the head of the diagnostic pathology section of the Texas Veterinary Medical Diagnostic Laboratory in Amarillo, Texas, from 1982 to 2003, when he came to Laramie.

Montgomery has spent about 75 percent of his time providing diagnostic pathology services for the WSVL, focusing on domestic ani-

mals and livestock. He has been heavily involved in the research of bovine virus diarrhea and how it affects the brains of cattle.

"I want to stay involved in diagnostic pathology, but it will be at a lower level with my new appointment," he says.

He oversees 11 faculty members, including three pathologists, and approximately 20 support staff including laboratory technicians, a research scientist, livestock manager, and office assistants. A fourth pathologist should be hired by late fall.

Montgomery earned a bachelor's degree in veterinary sciences in 1974, a doctor of veterinary medicine degree in 1976, and a Ph.D. in veterinary pathology in 1981, all from Texas A&M University.

Academic and Student Programs

Student recruiting and advising are among the focuses of **Laurie Bonini**, who joined the Office of Academic and Student Programs last spring as a senior office associate.

Bonini will also assist College of Agriculture faculty members having questions about student advising.

"I'm looking forward to



Laurie Bonini

the interaction with students and faculty and staff members," Bonini says. "Everyone has been friendly and helpful. It's been very nice here."

Jim Wangberg, associate dean and director of the Office of Academic and Student Programs, says, "We were very fortunate to attract a person of Laurie's caliber to the college. She has a great appreciation of our academic mission and programs as a result of her prior experiences with the University of Wyoming's Office of Academic Affairs."

Bonini brings a broad university perspective and familiarity with programs and resources throughout campus. "Laurie is highly personable and professional in her interactions with others," Wangberg says.

Bonini is looking forward to student follow-up

PROGRAM NOTES

in her dual role of recruiting and advising. “The job will allow personal interaction with students interested in coming here and through the course of their education,” she says.

She is also looking forward to encouraging faculty members and student ag ambassadors to spread the word about the college and what it offers during their travels.

“They are a valuable student-recruiting resource for the college,” she says.

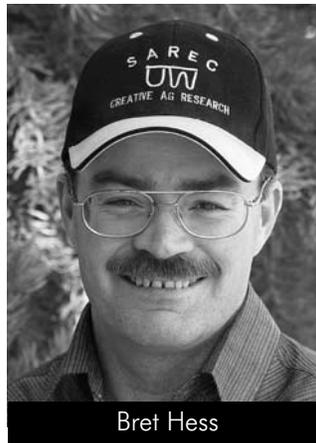
Bonini worked in the Office of Academic Affairs for seven years, most recently as a staff assistant assigned to the University Studies program and UW Freshman Interest Groups.

Agricultural Experiment Station

The summer started with a bang around the state and included such phenomenon as record high temperatures, record low temperatures, freezing temperatures in June at Lingle, too much rain in the northeast, and too little rain in the southeast. These are a few of the reasons the University of Wyoming has four research and extension (R&E) centers (Laramie, Powell, Sheridan, and Lingle) located strategically around

the state, says **Stephen D. Miller**, associate dean and director of the Agricultural Experiment Station (AES).

Bret Hess, associate professor of ruminant nutrition in the Department of Animal Science, was appointed assistant director of the AES. Hess will devote 20-25 percent of his time writing grants to support AES activities, building integrated research teams, and developing summer intern programs at the R&E centers. “Bret’s leadership and enthusiasm are a tremendous addition to the team,” notes Miller.



Bret Hess

Alan Gray retired as director of the Powell R&E Center and has been replaced by **Abdel Mesbah**. Mesbah plans to build on a number of programs Gray initiated.

Gray was seriously injured in a freak accident when harvesting forage plots at Powell in July 2005. He has made a tremendous recovery but believed it was time to retire, says Miller. A retirement celebration was held for him following the Powell field day July 10, and, from people in attendance, it was evident Gray would truly be missed by the university and agricultural community, says Miller.

Justin Moss, director of the Sheridan R&E Center, has greatly expanded UW’s horticultural efforts in northern Wyoming and was instru-



Gary Franc, University of Wyoming Cooperative Extension Service plant pathologist, explains various plant disease research at the James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle during a field day this summer.

mental in allowing UW to develop a third-year horticultural program in conjunction with Sheridan College. Moss hosted three workshops and College of Agriculture Dean **Frank Galey's** advisory committee this spring and summer. Workshops included one on small-acreage issues, grapes and freezing temperatures in Wyoming, and a train-the-trainer Master Gardener program that involved classroom and hands-on learning.

Jim Freeburn, operations director at the James C. Hageman Sustainable Agriculture Research and Extension Center (SAREC) near Lingle, has been very involved in developing construction plans for a wet laboratory and dormitory addition at the site. Money for these efforts came from a grant from the U.S. Department of Housing and Urban Development by the late Wyoming Senator Craig Thomas. SAREC hosted the Wyoming Agricultural Business Association meeting and field tour in July and the groundbreaking and re-naming dedication in August. The facilities at SAREC have been re-named in honor of the late James C. Hageman, a strong supporter of the center and higher education in the state.



Tansey Sussex

Cooperative Extension Service

The University of Wyoming Cooperative Extension Service has had two new educators join and a change in appointment.

Tansey Sussex started June 1 as the 4-H/youth extension educator in Converse County. Sussex completed her bachelor's in animal and veterinary science with a production option from UW in 2005 and received an associate's degree in general agriculture from Casper College in 2003. Sussex grew up in the Glendo area and participated in 4-H and FFA.

Brynn Berg started July 5 as the 4-H/youth extension educator in the Cody office of Park County. Berg is completing her master's in animal science and reproductive biology from UW. She received a bachelor's in molecular biology in 2004. Berg grew

up in the Riverton area and is an alumnus of the Fremont County 4-H program. She was a summer intern in Fremont County in 1999.

Raina Spence began a full-time extension appointment as state Master Gardener coordinator and horticulturist in March. She started with extension in August 2002 as a part-time plant pathologist. Spence received a bachelor's degree in biology with a botany minor in 1999 from Central Washington University and a master's in plant pathology in 2002 from Washington State University.

Ag Development and College Relations

This year's Legacy Award recipient, Violet Dinwiddie, demonstrates the importance of planned gifts to the College of Agriculture, says **Anne Leonard**, director of Ag Development and College Relations.

In the past few years, planned gifts have funded scholarships and research programs, and supported faculty members in the college, she says.

"These gifts take many forms – bequests, charitable unitrusts, gifts made from an IRA or stocks, and gift



Anne Leonard

annuities. In addition to strengthening the College of Agriculture, many alumni and friends find that a planned gift offers tax advantages and, in some cases, an income stream. Gifts of at least \$50,000 or more also qualify for the current legislative state matching gift program. This program will match – dollar for dollar – gifts to permanent endowments in the college," says Leonard.

If you have not visited the UW Foundation planned giving Web site, please do so (<http://uwyo.giftlegacy.com>), says Leonard.

For more information about helping the College of Agriculture using a planned gift, contact Leonard's office at (307) 766-3372 or aleonard@uwyo.edu, or UW Foundation Chief Financial Officer and Treasurer Mary Ann Garman at (307) 766-3939 or mag@uwyo.edu.

Student Farm

(Continued from page 5)

native ways to grow their own food locally and encouraging them to be less dependent on food grown elsewhere, which, in most cases, is more expensive than what they can grow themselves.”

Omondi will provide help in areas in which he believes he can help. He also hopes the initiative can partner and/or collaborate more proactively with his project in Kenya.

Members of a prospective food co-op in Laramie always mention being able to buy locally produced food – much more than buying organically grown food, says Smith. “Eating good foods grown locally has become a major interest

to a lot of people, even here in Laramie,” he says. “The student farm can help meet some of those desires for local foods and probably play a role in encouraging others to get into the business.”

Smith says several people in and around Laramie have expressed interest in their own vegetable farm and are either in the planning or early implementation stage.

“We can support that in a number of ways – demonstrations, information sharing, and the infectious enthusiasm the college students bring to the student farm,” he notes.

Community members also provide experience and continuity to the project.

Various groups, including local greenhouses, have

donated seeds to boost the project. Windmill Hill Greenhouse in Laramie donated more than \$365 in seed, says Baldwin, and businesses outside Wyoming have also contributed.

Vegetables being raised include potatoes, onions, beans, lettuce, shallots, broccoli, radishes, cucumbers, carrots, and squash.

The group planned to sell vegetables at the Laramie Farmers’ Market, and Huerter would like to find a way to fund two student positions at the farm next summer.

“I hope that next summer we can begin to get moving in a more educational direction, hosting workshops, tours, and field trips for anyone who is interested,” she says. 🍅

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