UW COLLEGE OF AGRICULTURE

AG NEWS

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Dear Friends and Colleagues,

We sincerely hope that you had a great holiday season and are headed into a prosperous new year. We had a wonderful time visiting with many of you during our "Ag Appreciation" weekend and trust that the rest of the fall went well.

As mentioned in our last newsletter, I have been spending a great deal of time preparing the college for our next round of academic planning. The college is very diverse, providing educational programs for students and citizens in several major fields of study. Our focus areas have been loosely defined in four particular fields, including sustainable agriculture centered on forages and forage-based livestock production, renewable natural resources (water, range, open spaces, soil, and integrated weed control), life sciences (reproductive biology, biotechnology, and the study of diseases of wildlife and livestock), and the health of our rural communities (economic diversity, small business development, community planning, leadership, communication about agriculture and natural resources, and nutrition). We are now wrestling with how we might take advantage of the diversity within the college in terms of recruiting new students and also of fitting in with overall university plans.

As we gather proposals, I have asked the college to focus on the land-grant ideals of learning, discovery, and engagement. Our strength comes not only from our strong faculty and students but also from our link with the community we serve. I have asked the Dean's Advisory Board, which consists of producers, land managers, industry representatives, and others interested in agriculture and renewable natural resources, to read drafts of these plans. I am especially interested in their thoughts on how we can maintain and strengthen our service to you in our community. Since the fields as listed above were selected based on comments that I heard during my visits around the state last spring, I am especially interested in hearing from you about our college focus and how we might do a better job of marketing ourselves to students and our other stakeholders.

As mentioned, we had a very successful meeting with the Dean's Advisory Board in the fall. We discussed the academic planning process and the advisory board itself and heard from the campus regarding the president's priorities for the next year. In addition, the board undertook an important new role in development by helping in our efforts to secure private funding for some of our most exciting and promising programs. Currently, less than half of the dollars that reach the college come from the state. We rely on grant dollars, federal land-grant support, and your generosity for the balance of our funding. Thus, we have asked this board of advisors to help lead our development effort. Thank you to all who have given so generously to our annual fund and special project gifts.

This issue highlights a few of the people, successes, and linkages that make the College of Agriculture special to so many of us. Beth Williams's pioneering research about chronic wasting disease is internationally recognized and deals with a critically important current topic. Jeff Lockwood shares his philosophy about his profession in a recent book and in two more to come. One of our alums developed the Master Gardners program, a popular link with the public. Collaboration between the college and a producer that reaped great rewards is featured. You will also find articles about recent grant, student, 4-H, and graduate successes.

Thank you for your support for the college. I hope to see many of you this winter at various locations around the state. I hope you had a safe and happy holiday.

"Any person who contributes to prosperity must prosper in turn."

Earl Nightingale

UNIVERSITY OF WYOMING

Elizabeth Williams pioneers chronic

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

When Elizabeth Williams first characterized infectious chronic wasting disease in deer and elk as a graduate student 25 years ago, there wasn't much interest in her research. Today the University of Wyoming (UW) professor of veterinary sciences is recognized as an international expert on the disease and is leading a study to determine if it could spread to cattle.

"I hope it goes away tomorrow," Williams says of the disease she has devoted much of her career to analyzing. The reality is that her work is all the more urgent as chronic wasting disease (CWD) has spread from its known areas in southeastern Wyoming and northeastern Colorado to elsewhere in Colorado and also to Nebraska, South Dakota, Wisconsin, Illinois, and Saskatchewan. It is also showing up on game farms in western states and provinces. She expects to be at the Wyoming State Veterinary Lab testing the brains of harvested mule and white-tailed deer and elk—sometimes as many as 200 animals a day during hunting season—for years to come to learn more about this prion-caused disease of the central nervous system, which leads wildlife to gradually grow thin and die as it eats holes in their nerve cells and causes degeneration of their brains and spinal cords.

Interest in CWD has grown steadily since the 1970s when Williams was training in pathology and began studying cases of the scrapie-like disease in wildlife. Media attention catapulted it into the headlines in the aftermath of the United Kingdom's diagnosis in the 1980s of another prion-caused illness in cattle herds called bovine spongiform encephalopathy (BSE), dubbed "mad cow disease" and eventually linked to a variant that afflicted humans. It was later suggested in some publications that CWD was also classified as a BSE. Did that mean that CWD posed a threat to people? The headlines warned of "mad deer disease."

Williams decries the sensationalism, which she says has led to her office being swamped with phone calls. "At this point in time there's no evidence that humans get CWD. We certainly can't rule that out, but to build hysteria among people I don't think is very responsible," she says. "To our knowledge, CWD hasn't killed any person. It hasn't killed any livestock. Let's keep things in perspective with all of the relative risks that are out there. For example, West Nile has killed people and killed livestock." The professor says she is often asked if she would eat a deer or elk. "My answer is yes. I hunt here. As a scientist my job is to get information out to people so that they can make informed decisions as to what they want to do."

She advises hunters to be prudent and to refrain from shooting an animal that looks sick. "Do things like wearing rubber gloves when dressing a deer or elk. Don't handle the brain or spinal column. Bone out the meat and discard the brain, spinal cord, eyes, spleen, and lymph nodes. Use household bleach to clean tools. These are easy, common sense things to do. If you are still not comfortable with the unknowns associated with CWD, have the animal tested at our lab or hunt in areas where CWD hasn't been identified."

Hunting areas east and west of Laramie in Albany, Platte, Laramie, Goshen, Carbon, Converse, and Natrona counties have had deer populations tested showing that some 15 percent were infected with CWD. Less than 1 percent of the elk tested in the same locations were afflicted. The overall prevalence in deer in all the endemic areas in Wyoming, Colorado, and Nebraska is approximately 6 to 8 percent. Research is underway in one hunting section to determine if cutting the deer population in half might affect the incidence and spread of the disease.

With the increasing interest in CWD, funding

wasting disease research

for research has grown as well. Williams is currently collaborating with the Wyoming Game and Fish Department and the Colorado Division of Wildlife to try to determine how CWD is transmitted and whether cattle exposed to the agent that causes the disease will develop any symptoms of CWD. "So far we don't have any evidence that cattle are susceptible," she reports. However, four of thirteen cattle showed a possible susceptibility when the agent was inoculated directly into the brain, an obviously abnormal route of transmission. Controlled studies are also underway to see if animals can contract CWD through contaminated feed or by sharing pens with infected deer and elk. Congress is looking at legislation to earmark more than $32 million over the next two years to help states fight the disease.

Williams's designation by the U.S. Department of Agriculture as an expert on CWD has thrust her into the national and international arena. Her frequent trips to Washington, D.C., to serve on advisory committees for the Food and Drug Administration, for an organization dealing with transmissible spongiform encephalopathy (TSE) diseases, and for other federal agencies have given her the opportunity to exchange information about CWD. "Hopefully we are providing some assistance to these agencies, but at the same time I am getting an awful lot out of it as well," she says. The professor attends international TSE meetings and met with researchers in Scotland in the fall to discuss CWD. Williams earned her undergraduate degree in zoology at the University of Maryland, a doctorate in veterinary medicine at Purdue University, and a doctorate in veterinary pathology at Colorado State University. She has been a member of the UW veterinary sciences faculty since 1987.

Elizabeth Williams draws a sample of brain tissue from a harvested deer head to be studied to determine if the animal was a victim of chronic wasting disease.

"Wyoming is a good place for research because we have CWD here and because Wyoming has a long history of working with wildlife diseases," she says. "Wildlife is really important to us." Although there are other animal diseases that have interested Williams over her long career, she says that "right now CWD has got me swamped."

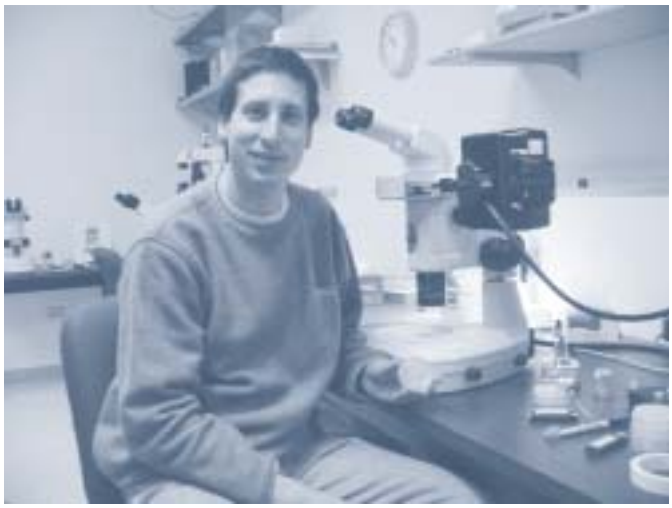
Molecular biologist uses $800,000 grant for cancer

David Fay spends his days poking at worms and loves it.

The associate professor of molecular biology is the only researcher in Wyoming studying a freely living soil nematode called *C. elegans* to learn more about cancer in humans. The American Cancer Society is impressed. The organization has given Fay and his worms an $800,000 grant to expand the kind of research that could one day lead to better ways to combat the deadly disease. "As things go for the worm, so they go for man," Fay says.

Fay joined the faculty of the University of Wyoming's College of Agriculture a year ago, bringing with him the independent research he established while completing post-doctoral work in molecular, cellular, and developmental biology at the University of Colorado in Boulder. He earned his bachelor's degree in chemistry at Tufts University and his doctorate at Yale University.

His niche is studying a worm gene that is the homolog (member of a related protein family) of a tumor-suppressor gene in humans known as Rb. "Mutations in Rb have been implicated as playing a casual role in many types of human cancers," Fay explains.



David Fay discusses his cancer research with C. elegans *worms in his lab in the College of Agriculture's Animal Science/Molecular Biology complex.*

"We are trying to figure out how this gene works in worms," the professor says. "We hope that our research will identify other genes that play a role in cancer and will also lead us to finding therapeutic targets for treating cancer. Of course, that's a great leap from where we are now, but science builds on itself. We are laying the groundwork, but it's compelling groundwork."

C. elegans is a model organism to use for research into diseases because it shares many of the essential biological characteristics that are common to human biology. Why study worms instead of more popular critters like mice? "The number of tools available to *C. elegans* researchers greatly outnumbers those available for studying mice," Fay says. "Also, we can move with relative lightning speed with these worms compared to what's possible with mice." A *C. elegans* can progress from a single-cell embryo to an adult making its own embryos in just over three days. Underscoring the importance of *C. elegans* to biomedical research, the latest Nobel prize in medicine was awarded to three researchers who brought to light mechanisms by which cells undergo a process called programmed cell death or "apoptosis." Deregulation of this process has been implicated in many human disease states including cancer.

Fay's worms spend their days feeding off bacteria contained within agar petri dishes. For experimentation, the creatures are treated with mutagens to randomly mutate their genes, thus causing them to become specifically defective in a particular process that is being studied.

"The inference is very straightforward," the molecular biologist says. "If a worm is displaying a particular defect that we are interested in, the conclusion is that it has acquired a mutation in a gene that controls that process. With this type of genetic approach, we let the animal tell us how things are working. We can go into this type of experimentation completely unbiased. Mutants of that organism are going to lead us to the underlying biology at a molecular level."

Fay, who is teaching developmental genetics during the spring semester, has two full-time and two part-time people working with him in his lab. Thanks to the four-year American Cancer Society grant, he will probably be able to hire three or four

more full-time researchers. "The most satisfying thing about a science career is working with other people," he says. He is particularly excited about being able to encourage students who want to move into individual research careers of their own. To stay in touch with his field, Fay takes his lab to the University of Colorado in Boulder every other week. There are about 200 *C. elegans* labs in the nation, including eight in the Denver/Boulder area. More labs are operating in Europe and Japan, and Fay says 3,000 scientists usually attend professional gatherings.

He doesn't mind being the lone researcher in Wyoming. "It gives me a degree of distinction that I wouldn't have in most other places," he says.

Regarding his progress at UW thus far, Fay says, "One sort of gets acclimated to the pace of research. You kind of have to celebrate the minor, sometimes very minor, successes. You don't wake up some morning and find that you have cured cancer. In truth, it requires an almost never-ending patience and a lot of hard work. You have to be really dedicated to move science forward."

Karen Schutte

Family and consumer sciences graduate accomplishes her dreams

Thanks to her University of Wyoming degree in family and consumer sciences, Karen Schutte now owns an interior design firm, is publishing a decorating book, and lives in a custom home that she created. A 1987 College of Agriculture graduate, Schutte is an allied member of the American Society of Interior Design and also holds a certificate of design from the New York School of Interior Design.

Sonya Meyer, an associate professor in family and consumer sciences, remembers Schutte as being "focused, dedicated, and, most of all, enthusiastic about interior design."

Schutte cites her UW degree and her "street smarts" in the designing world with giving her "credibility" with her peers and friends. "The degree also presented in-depth knowledge of the basics of design and marketing that rounded my understanding of interior designing." Her education provided Schutte with a holistic understanding of how the design of interior space affects people in their everyday lives.

The owner of "Interiors by Karen," Schutte has written *Everybody's Decorating Book*, which is in the process of being published. "This book is a complete, educating, and non-intimidating approach to the decorating problems that we all face at one time or another," she explained. "I go into depth educating the reader about the principles and elements of design as well as the history of styles."

Originally from Emblem, Wyoming, Schutte grew up the oldest of four sisters on her parents' farm. The family raised beans, corn, alfalfa, grain, sugar beets, sheep, and cattle. "I had to work hard, and that taught me that the rewards are numerous," said Schutte, who has spent 23 years in interior design. "This has been my life philosophy – to first try and then to get busy and get it done."

She majored in elementary education at UW in 1960, raised four sons, and then became interested in interior design. She took correspondence classes from the New York School of Interior Design but needed a four-year degree to join the American Society of Interior Design. At 41, Schutte returned to UW to accomplish this goal and to meet another dream by obtaining a college education.

After living in San Diego, California, for many years, Schutte and her husband have now settled in a log home she designed in the Glacier View area of Colorado. With its blending of southwestern, western, mission, and ethnic American styles, the home was featured in the November, 2001, issue of *Log Home Living*.

Schutte sees her career as coming full circle. "I am living my dream of interior design," she said.

Jeff Lockwood's newest musings blend science,

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

Having once tested the waters of soulful essaying and surviving the fear of having his heartfelt musings read, Jeff Lockwood is writing again as the philosopher-entomologist who raises unanswerable questions about the science of killing and the morality of living with it.

While *Grasshopper Dreaming: Reflections on Killing and Loving* examines his role as a master of poisons haunted by heartfelt spirituality, the professor's latest journalings from the Department of Renewable Resources explore the notion of grasshoppers as unwitting but powerful teachers and locusts as mysterious marauders.

The Romantic Entomologist: Grasshoppers as Guides, Goads, and Gurus will be Lockwood's second collection of essays grappling with the necessity of protecting agriculturists from grasshopper infestations while still respecting the creatures, their place in the world, and their kinship with the rest of nature. "Grasshoppers as guides lead me to both physical and conceptual places," Lockwood explains. "As goads they force me to think in different ways, they prod me. As gurus they are teachers, creators that reveal the different ways of the world."

There is yet a third book underway. Grasshoppers of a different kind—Rocky Mountain locusts—are the stars of Lockwood's newest effort, which will be about the historical scientific mystery of the insect that devastated pioneer settlements in the 1870s and 1880s with single swarms that stretched some 1,800 miles long and 110 miles wide. Less than 30 years after blanketing millions of square miles, they appeared to be extinct—the last one seen alive was spotted in 1902.

Seven-year-old Laura Ingalls Wilder describes the 1872 plague that ruined her family's dreams in Minnesota in her book *On the Banks of Plum Creek*. "Huge brown grasshoppers were hitting the ground all around her, hitting her head and her face and her arms. Their claws clung to her skin and her dress. They looked at her with bulging eyes, turning their heads this way and that. Grasshoppers covered the ground; there was not one bare bit to step on."

Jeff Lockwood talks about his newest books and the questions they pose.

Lockwood intends to weave pioneer accounts into his historical sleuthing on the occasion of the 100th anniversary of the locusts' vanishing act, speculating that habitat conversions by farmers in fertile river valleys perhaps played a pivotal role. "It's the only case of a pest being driven to extinction, and we did it accidentally," he notes. Lockwood will actually appear as a character in his own book—as a scientist, of course. He will also include a section on religious responses to the locusts which were often grounded in the Old Testament belief that such scourges were the reaction of a God angry over the moral lapses of his flock. The book is yet untitled, but Lockwood is enjoying pondering various historical and literary allusions, such as one pioneer's provocative reference to "Satan's green imps."

His establishment as the humane author of grasshopper tales now growing secure, Lockwood is braving another new world. One of his poems will appear in a book called *The Blessed Pests*. He finds writing poetry "a useful exercise for distilling an essay

history, and paradox

or a thought or a concept." Lockwood adds, "If you can put it into a poem, it really imposes a level of discipline that's very helpful in the writing process."

As his stage or "book" fright begins to subside, the professor finds himself fitting more comfortably amongst the lawyers, agents, editors, and readers who now inhabit his world. He likens having his writings judged to an intense fear of emotional exposure, particularly in the culture of rational, private male scientists. "I think that we all have something to say. The challenge is saying it so that somebody wants to hear it," he says.

Lockwood is pleased with the reactions *Grasshopper Dreaming* has received from people both on and off campus. To two of his boosters, Department of Renewable Resources Head Tom Thurow and College of Agriculture Dean Frank Galey, Lockwood offers his own praise. Despite the fact that his new writings stray from the format of scientific publications, he has found the administrative support of the two men to be understanding, respectful, thoughtful, and encouraging. "They authentically value what I am doing and consider it to be an entirely legitimate activity for an academic."

Although his fellow scientists have been somewhat mute, he has received nods from the humanities and philosophy communities and from others close to the land, such as the extension agent in Colorado who understood why the question of why one must kill to live needs to be asked. "He found value in the exercise of wondering," Lockwood recalls. He isn't necessarily surprised to learn that parts of the book have been used in sermons in the Midwest and East.

Have his writings helped him resolve the moral dilemma posed in *Grasshopper Dreaming* of whether his job as a killer of insects can be justified and rationalized from a spiritual viewpoint? "They don't help in terms of now being somehow closer to a solution or resolution or answer," Lockwood says. "The help is in understanding that the answer is not going to come and that what I need to do is live richly in the midst of the tension or the paradox or the uncertainty."

WAYS TO GIVE

"Apart from the ballot box, philanthropy presents the one opportunity the individual has to express his meaningful choice over the direction in which our society will progress."

—George G. Kirstein, philanthropist

The University of Wyoming College of Agriculture enjoys a reputation for sound research, exceptional learning opportunities, and innovative outreach projects. The college is constantly striving to improve its programs of excellence, and the private support of alumni and friends provides the key. In addition to giving gifts of cash, there are many other charitable ways to help the College of Agriculture:

- Remembering the college in a will or estate plan,
- Establishing a charitable trust,
- Donating appreciated stock,
- Donating equipment or other tangible goods, and
- Leveraging a gift. Corporation matching gift programs normally match employee gifts to colleges and universities. In addition, pledges and gifts of $50,000 or more for permanent endowments may be eligible for a one-to-one match from the state of Wyoming.

For more information about these and other gift opportunities, please contact Director of Development Anne Leonard (307) 766-3372 or Director of Gift Planning David Mays (888) 831-7795.

There are many ways for alumni and friends to give.

This field of labor-free sugar beets grown by Mike Forman on the farm of Lloyd and Sandy Snider was the result of decades of collaboration with the College of Agriculture.

Long-term collaboration between college and producer reaps rewards

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

Lloyd Snider of Powell looked for the first time this fall at fields of sugar beets and pinto beans grown on his farm that were free of weeds without the help of hand labor. He's thanking the College of Agriculture for the 35 years of research that led to this success story.

"I believe this is an outstanding example of what the College of Agriculture accomplishes for Wyoming," wrote Snider in a letter to Dean Frank Galey. In another thank-you note to Plant Sciences Professor Steve Miller, Snider also said, "I feel it is time that you and all the folks at the College of Agriculture are recognized for all the good work you do. We certainly appreciate the progress that we have made in weed control in the last 30 years or so and feel you have been a major part of it."

Some four decades ago, Snider began allowing University of Wyoming researchers to use part of his land for agricultural experimentation. "The goal was to be able to develop a system of growing weed-free sugar beets with no labor," Snider said, recalling professors like Jim Fornstrom, Mike McNamee, Alvin Gale, and Harold Alley, who were pioneers in the process. At that time, 100 percent of the beet fields relied on hand labor for weed control and stand-thinning.

As part of the testing, crops that were once planted three inches apart and thinned by hand have been gradually planted seven inches apart and have no longer required thinning. One or two herbicide applications that once left stands still needing labor to remove weeds have been gradually replaced with multiple applications of

micro rates that have controlled multiple weed flushes. New planting equipment along with improved herbicide programs that have evolved over the years have also played a major role in developing labor-free crops.

According to Mike Forman, who has been Snider's tenant since 1980, "This season's crop is the first we have been able to accomplish with no labor." He estimates the savings to be approximately $80 to $100 an acre. "The rates and application methods have been fine-tuned," he said. "The University of Wyoming has been real involved in that."

In Snider's letter to the dean, he cites the collaborative efforts of those who have contributed to the long-term project. "It has involved many cooperating scientists in the college including agriculture engineering, entomology, agronomy, weed science researchers, extension specialists, and graduate students," he noted. Snider also praises the research and extension centers, chemical companies, and sugar companies like Western Sugar for their participation. Many years of grower-funded research committee efforts have also been involved.

Miller, who has helped with the research for many years, says the thanks should go to Snider. "We have done research on his farm for the past 35 years. He has watched us very closely as time has passed," Miller said. "He has allowed us the use of his land and has always been interested in the experimentation we were doing. He has been an excellent cooperator. He basically allowed us to do about anything we wanted."

The work is continuing. "This year we had near ideal conditions for spraying. We might not always get that," said Forman. "Things came out perfectly this season, but we haven't duplicated that yet. We will keep fine-tuning. Research has no real end, it's just continuous."

Snider, who came to Wyoming from California 52 years ago and is on Dean Galey's agricultural advisory committee, is satisfied. "This is what the university can do when it sets its mind to it," he said. "Here is a field of sugar beets, and no one had to walk up and down the rows with a hoe."

Forman, who has a degree in crop sciences from the UW College of Agriculture, shares the enthusiasm. "This is a win-win situation. When the university has a success, that's what it's all about. That's the whole idea of land-grant colleges. We help them, they help us."

Sheep at the Center for the Study of Fetal Programming are being used by the Department of Animal Science to study the effects of malnutrition and other maternal stressors on the wombs of pregnant sheep. The goal is to help produce healthier offspring.

Enjoying the fragrance of tomato plants growing in the College of Agriculture greenhouse complex is coordinator Robert Whitbey. Researchers and students use the facility's 18 separate greenhouses, laboratories, classroom space, and dryland and irrigated outdoor demonstration plots for plant experimentation.

Generations of 4-Hers in Wyoming

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

The roots of 4-H run deep in Wyoming – five generations deep. Families like the Shanes of Niobrara County, the Moodys of Platte, the Fears of Sublette, and the Eckhardts of Washakie represent hundreds of years of 4-H stretching from the 1920s to the present. Stories such as theirs are being celebrated as the state joins the national recognition of the 100th birthday of 4-H, the youth education program of the University of Wyoming Cooperative Extension Service (UW CES).

"Every one of them will tell you that the experience has been fantastic," said Carmen Tyrrel Shane of Node, describing the life-long 4-H experiences of her relatives. Stories of families like hers were re-created on posters and in notebooks in a special "Generations of 4-Hers" display at the 2002 state fair. "We have had a wonderful time over the years."

Shane's grandmother Josie Tyrrel was a 4-H leader in the 1920s. Her father Gene raised livestock in 4-H and later became a leader. "I remember him telling stories," she recalled. "They had flatbeds with panels around them, and the kids rode on the trucks with their animals." Shane became a leader after participating in 4-H for nine years with her brother Claude and sisters Karen and Susan in the Up and Coming 4-H Club in Niobrara County.

Her husband Jimmy's parents Jim and Irene Shane and he and his siblings were all members and leaders. He has a brother-in-law who was a member of one of the first 4-H clubs in a county in Nebraska. The legacy has spread to the offspring of Jimmy's siblings Bonnie and Patty and to the youngsters in the fifth generation. Carmen and Jimmy's two daughters JoAnn and Brenda have also been active, and Brenda served as a leader for her own daughter.

Tyrrels and Shanes have excelled in sewing and livestock as 4-Hers and leaders for some 80 years, attending national competitions and helping their communities. The program has led many of them into ranching careers. "It has been a good program for both of our families," Carmen Shane said. "When our kids were small, that was our social life." She praises the public speaking experience her family has gained through 4-H involvement. "We have some shy kids in our family. It brings out their personalities and gives them confidence. It's important to be responsible for your actions and to have to think on your feet. You don't have to agree with everybody, but you have to be able to stand up and support your views."

She also compliments 4-H for its family orientation and says the older generations are always on hand at fairgrounds to support the younger generations of her family. "It has been a wonderful program for us. We wouldn't trade any of it."

Platte County's Moody family of Wheatland offers similar accolades. "I think 4-H is just a great thing. It teaches so much about responsibility," said Janet Carey Moody. Her 4-H heritage began with her parents John and Helen Carey and her in-laws Dale and Nellie Moody, all of whom were involved with the program. Her husband worked with youths in a tractor club, and she made the transition from 4-Her to leader of the Eversharp group, also serving as an officer in the leaders' council. She still helps to judge record books.

"I remember one time for fair for the parade we took a wagon flat cart and built a loaf of bread out of some chicken wire," she recalled of her membership in the Baker's Dozen 4-H Club. "We used dyed napkins in the wire and pushed that thing down through town. After we got the display home, we took it all apart, and I put some of it in a scrapbook for my kids."

continue the program's legacy

Her children Cindy, Mary Lynn and Rick competed in national 4-H and have gone on to promote the experience for their children. The youngest generation is learning about gardening, woodworking, wildlife, shooting sports, photography, food and nutrition, child development, visual arts, electricity, leathercraft, dogs, petroleum power, and automotive skills. "They are proud of what they do and what they accomplish," Moody said. "To me, 4-H is just great."

Mardell Fear of Big Piney in Sublette County discovered 4-H leadership when her mother Inez Bennett took a part-time job in the 1930s and needed a fill-in leader for the small group of girls she was teaching to sew. She remembers that her seven little charges each made a pin cushion, a tea towel, a pillowcase, and a plain kitchen apron.

Now 81 and an accomplished seamstress, Fear is still involved with 4-H along with her four children, 11 grandchildren and 12 great-grandchildren. Many of her grandchildren have paid for their educations at the University of Wyoming with the money they earned through their livestock sales. One earned a national 4-H scholarship. There are family cabinets full of ribbons and trophies.

Her daughters Deanne, Lynda, and Melodie, she said, "grew up attached to 4-H" and went on to become involved in state, regional, and national 4-H activities while still serving the Dandies and Barnyard Bunch 4-H clubs. Her daughter Melodie was named 4-H Leader of the Year in New Mexico, and one of Melodie's daughters won a national award for her essay "4-H Was in the Family Blood."

Fear says 4-H has been her career. "We have all really taken an interest in 4-H. I think it has helped us to meet the public and to become better citizens."

Seventy-six-year-old Vera Eckhardt of Worland hopes the history and legacy of 4-H will be preserved. "Kids are different now. They don't have as much time for 4-H as we did," she said. "For us, 4-H was the thing to do because we didn't have lots of other things with living in the country."

Her family is doing its job to keep 4-H alive. Eckhardt's mother Dorothy Hinkle started her 50-year tenure as a 4-H leader in the 1930s in Thermopolis and was the first state council historian. Her own involvement began in 1936 with the South Flat Juniors 4-H Club and continues today. Her daughters Tammy, Val, Diana, and Deany became leaders after winning scholarships and national trips as youths. Eckhardt has served as 4-H leader for most of her 17 grandchildren, and her great-granddaughter Stevie Eaves, 11, is currently in her South Flat group.

Eckhardt says she has enjoyed watching children "blossom" through 4-H and move on to careers boosted by the skills they garnered as participants. "My basement is 4-H history – it's all over the place!" she said of her efforts to preserve the heritage of 4-H for future generations. She hopes they will "do 4-H" and enjoy its livelong benefits.

Master Gardeners grows into a masterpiece

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

Arlen Davison had no idea that a plant disease diagnostic clinic he established in 1967 to assist county extension agents would spawn much more than some helpful hints for backyard gardeners. Thirty-five years, 50 states, and four Canadian provinces later, Master Gardeners volunteers have assisted millions of amateur horticulturists by answering questions and providing hands-on guidance. "We had no idea that any of this would happen," Davison, who has bachelor's and master's degrees from the University of Wyoming (UW), says today.

As he describes it, Master Gardeners developed "out of sheer desperation" as a means for helping the baby-boom generation of homeowners landscape and care for their yards. "County extension offices were being deluged with questions," Davison recalls. At the time, the UW College of Agriculture 2002 outstanding alumnus had completed a doctorate in plant pathology and was in the midst of a long career with Washington State University's Cooperative Extension Service (WSU CES). He and his colleagues decided, "If we could train some people who were already generally knowledgeable in gardening to put between us and the mass of general public out there, then maybe we could meet the demand."

The WSU CES educators tested the idea at a couple of shopping mall events to which home gardeners were invited to bring their plant or insect problems. The response was overwhelming. A reporter for *Sunset* magazine attended one of the clinics and wrote an article encouraging people interested in becoming volunteer garden helpers to contact CES. Some 500 inquiries later, the Master Gardeners program was officially born in 1972.

The first volunteers were trained by CES educators, and then clinics for home gardeners were conducted in libraries, shopping malls, grocery stores, nurseries, fairs, and "wherever there was people traffic," Davison says. The program gradually expanded into most of the counties in the state of Washington. "As the word spread across the country, the land-grant institutions that had extension developed their own schemes of how they wanted to use Master Gardeners, but the basic concept was the same throughout," Davison says. "We would have copyrighted the name if we had known what it was going to lead to," he adds.

Letters began arriving from people all over the nation who had taken the Master Gardeners training. "They were saying, 'My

Arlen Davison's education at UW led to a career in plant sciences and to a key role in the founding of Master Gardeners 30 years ago.

# of information for home horticulturists

gosh, I have got something now that I can volunteer for that I love,'" he recalls. Others reported that the training had led them to jobs in nurseries and urban forestry programs.

A few years later, a group of volunteers chartered the National Master Gardeners Foundation to raise funds to foster an exchange of information with other horticulture groups. Davison says specialized programs have developed within the Master Gardeners framework such as the teaching of horticulture in prisons and the use of plant therapy in children's hospitals. Volunteers have also been responsible for the development of community gardens and other service projects. Wyoming Master Gardeners members, with active chapters throughout the state, have helped in the education and beautification of their towns.

Interestingly, the Master Gardeners program has spawned other enterprises such as Master Food Preservers, Master Food Shoppers, Master Beach Watchers, and Master Livestock Advisers. "They all use basically the same concept of training knowledgeable volunteers and backing them up so that they have the references they need when they run into a problem," Davison explains.

Now retired from WSU and a resident of Puyallup, Washington, Davison enjoys talking about the program he helped develop and notes proudly that "the Master Gardeners have been successful in correctly answering about 90 percent of their inquiries, which is pretty darn good. The professional backstoppers are there to take care of the other 10 percent." One of the changes that has occurred over the last 30 years, he says, "is the gradual but very intentional shift in promoting the use of pest management methods rather than relying on the use of pesticides." He also sees the growing availability of Master Gardeners horticulture information on the Internet as a good tool for home gardeners.

Davison emphasizes that his role in the founding of Master Gardeners was just a small part of a team effort. "Primary credit for the long-term success of the program has to be given to the dedication and ingenuity of the volunteers," he says. "It all happened so wonderfully. It has been fun to see something that I was a part of become something as broad and as well recognized and as helpful as is the Master Gardeners program."

STUDENT NEWS

UW student and FFA president wins national speaking contest

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

University of Wyoming freshman and state FFA President Stacia Berry may have been just one of a record-high 51,025 students who attended the 75th National FFA Convention in Louisville, Kentucky, but she left her mark by winning the extemporaneous speaking competition.

With just 30 minutes to prepare, the agriculture communications major from Cheyenne gave a six-minute speech and endured a rigorous cross examination before taking the national title. She fought through three rounds of competition and defeated 50 other contestants to win the top spot.

Speaking off the cuff "is one heck of an adrenaline rush," she says. "It's exciting, but it's also a lot of pressure. It really gets the heart racing."

For her final topic of agricultural research and its effect on the business world, Berry pointed out that "it's a necessity for the public to understand the agricultural producer, agricultural commodities, and the consumers of those commodities." She concluded that "the more you know, the more you can become. Knowledge is power." She spoke in earlier rounds about the implications of using food as a weapon and about the role of e-commerce in the agriculture industry.

As leader of FFA for Wyoming, Berry is used to facing challenges. "FFA is dedicated to one mission—student success," she says. Berry, the eight other state officers, and FFA members spend much of their time working with high school students to help instill leadership skills and to show ways that the students can be successful using those skills.

The formula has worked for Berry, who competed in speech contests in high school and was also a member of a national championship parliamentary team two years ago. She has also been involved in dairy and poultry judging and has worked with issues concerning agricultural sales and service.

Wyoming FFA President and UW student Stacia Berry has added a national extemporaneous speaking title to her list of accomplishments.

"I am really excited about the fact that FFA has impacted me to know that I should have a dedication to serving others in the agriculture industry, not only to benefit myself but to benefit society as well," Berry says.

With a membership of 457,278 students representing all 50 states and Puerto Rico and the Virgin Islands, the national FFA organization provides a powerful voice for its mission of "making a positive difference in the lives of young people by developing their potential for premier leadership, personal growth, and career success through agricultural education."

Its national convention each year offers members the opportunity to learn about leadership development, career opportunities, how to compete in events, and how to celebrate their varied interests and goals.

"There's something for everyone whether it's a new member or an officer near the end of a term," Berry says. "To see that many people all wearing blue corduroy jackets in one place is something I'll never forget."

UW student to promote agriculture as national FFA officer

by Vicki Hamende,
Senior Editor
Office of Communications and Technology

Just six people lead the 457,278 members of FFA, and University of Wyoming (UW) agriculture student Seth Heinert is one of them.

Elected national secretary of FFA at its convention in Kentucky, the junior from Alva and Hulett, Wyoming, will spend 2003 traveling 100,000 miles through 40 states and Japan to promote the importance of agriculture.

"One of the main things I want to accomplish is to educate and excite people about agriculture and FFA," Heinert says.

Traveling, policy-making, and training state FFA officers will require him to take a year off from his studies. He is majoring in the business option of animal and veterinary sciences. "I believe that what I learn this next year is going to benefit me for the rest of my life," he says. Heinert will return to UW in the spring of 2004 to finish his degree and to pursue a career in the field of foreign agriculture education and relief, working to develop production, policies, and foreign trade relations.

Heinert believes he has been preparing for his national FFA leadership and his future since he was a youngster. He spent 10 years as a member and frequent officer of the River Rangers 4-H Club in Crook County, performing community service activities, learning crafts, and showing cattle. He joined FFA while an eighth grader, following his sisters Sara and Noelle, both FFA standouts and UW graduates. "I grew up knowing what it was and being involved in all the activities," he recalls.

In addition to maintaining and showing his herd of registered Angus cattle at county and state fairs, Heinert also showed horses and hogs and worked on FFA farm range management projects.

He served as sentinel, vice president, and president of his FFA chapter at Hulett High School and moved on to become sentinel of the state FFA organization. He enjoyed visiting chapters throughout Wyoming "to talk about what FFA does and to excite people to join and encourage them to stay in agriculture."

Heinert's enthusiasm is evident as he begins his year of national FFA leadership. "American agriculture is hands down the best, and we need to be able to pay our producers for it," he says. "Wyoming needs to be very proud of what its agriculture industry has accomplished. We need to tell people about organizations like FFA and the quality of students who are being assisted through its programs."

There's another point Heinert is clear about. "In all my travels speaking and promoting FFA and the ag industry, my heart is going to be in Wyoming. In everything I do, I hope to make Wyoming proud."

UW agriculture student Seth Heinert is the new secretary of the national FFA organization.

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Ag and Applied Economics

Ranchers and farmers can learn management techniques to apply to their own operations without ever leaving their land.

Acknowledging a changing world, changing lifestyles, and changing priorities, the Cooperative Extension Service (CES) is offering its Western Integrated Resource Education (WIRE) course online for the convenience of producers and other interested participants.

Instead of giving up days of time away from their operations, ranchers and farmers can stay at home and learn practical tools for integrating management of the physical, biological, financial, and human resources of agricultural enterprises. Online participants also learn about setting goals and priorities, making decisions, planning, budgeting, keeping records, and evaluating their operations. Topics include the relationships and interactions of ranch resources like soil, water, rangeland, crops, livestock, wildlife, finances, human creativity, and labor.

The third of the three-part series will run from February 17 to March 21 and will deal with the operational levels of the management process. The first two sessions on strategic and tactical issues were scheduled in November, December, and January.

Further information can be obtained on the WIRE Web site at www.agecon.uwyo.edu/wire/default.htm or by contacting John Hewlett, CES farm and ranch specialist, at hewlett@uwyo.edu or (307) 766-2166.

Animal Science

Optimizing the use of strategic protein supplementation in grazing and forage-consuming ruminant livestock is an ongoing research focus for Paul Ludden, an assistant professor of animal science. He has pinpointed the use of alternate-day protein supplementation as a way to enhance the efficiency of protein use in the animals.

The two types of dietary protein fed to ruminants include ruminally degradable (RDP) and ruminally undegradable (RUP) kinds. RDP is broken down by rumen microbes to form ammonia, a vital source of nitrogen that helps rumen microorganisms feed and grow. RUP escapes microbial breakdown and is transferred to the small intestine for digestion and absorption. The two combine to supply animals with protein for maintenance, growth, and production.

Alternating the protein sources is a way to enhance nitrogen recycling, thus decreasing the impact of ruminant livestock production on the environment. In addition to being able to use proteins more efficiently, producers also benefit from reduced costs for supplemental feed, labor, and equipment, all while maintaining animal performance.

Ludden also hopes to investigate the application of his alternate-day supplementation approach to use with high-energy supplements such as grain, perhaps finding a more economical way for producers to feed grain to livestock during drought conditions.

Family and Consumer Sciences

Two faculty members are helping to plan March conferences dealing with issues of public concern.

Assistant Professor Dena Goldberg is working with the Family and Consumer Sciences Student Dietetic Association, which is sponsoring a March 7 gathering in the College of Agriculture auditorium on Current Trends in Treatment of Eating Disorders.

The keynote speaker will be Monika Woolsey, a nationally known expert in the area of eating disorders and author of *Eating Disorders: A Clinical Guide to Counseling and Treatment*. Also speaking will be Betty Holmes, regional coordinator for WIN the Rockies. Her topic will be demographic trends involving eating disorders. Discussed at the conference will be

psychiatric, medical, and nutritional findings as well as treatment options.

Professor Virginia Vincenti is the chair of a committee planning the fourth Wyoming Issues Conference March 25 at the Wyoming Union. This year's focus will be on cars and consumers.

Keynote speeches will be on car culture by Lenora Bohren of the National Vehicle Emissions Control and Safety Lab at Colorado State University and on warranties and safety by attorney Laura Polacheck of AARP. Other topics of discussion will include buying new and used cars, leasing and financing, repairs and insurance, self-regulation, resolution of consumer complaints, safety issues, and licensing for youths and elderly people. Dee Pridgen, associate dean of the UW College of Law, will speak, and legislators, government attorneys, and representatives of the automobile industry will also be featured at the conference.

Molecular Biology

The Department of Molecular Biology has completed a cooperative agreement with the USDA Arthropod-Borne Animal Disease Laboratory, located at the University of Wyoming, to share access to some state-of-the-art research equipment.

The USDA laboratory has acquired approximately $250,000 worth of equipment for DNA sequencing and real-time PCR analysis. This is very high throughput instrumentation and can support the research of both the USDA and molecular biologists.

Under the agreement, the molecular biology department will provide space to house the equipment and will share in the operating expenses. This arrangement will benefit all users by assuring that this type of instrumentation is easily available and efficiently used.

Plant Sciences

The department hired Raina Spence as an academic professional in the Extension Plant Pathology Diagnostic Service Lab. Spence came from Washington State University where she obtained a master of science in plant pathology and was employed at the Mount Vernon Research Station. Spence says she thrives on the intricate world of science and bridging the gap between academia and the public. She is also an accomplished artist.

Examples of recent Department of Plant Sciences publications which take science to the public include: *Landscaping: Turf in Wyoming; Crop Selection for Supplemental and Emergency Forage*, which includes bulletins on sorghums and sudans, foxtail millet, forage kochia, and brassicas for fall grazing; *Jointed Goatgrass Ecology*; *Fungicide/Herbicide Combinations for Rhizoctonia and Weed Management in Sugarbeets*; and *The Sugarbeet Production Guide*. The latter publication was a cooperative effort between four universities and the USDA ARS. The publication received an "Outstanding Educational Award" from the American Society of Agricultural Engineers.

Arlene Mascarenas has been hired as a new office assistant senior. She comes to plant sciences from the College of Arts and Sciences where she worked in the history department for 10 years and more recently in Chicano studies. A bit of deja vu...the office that Mascarenas occupies today is the same office in which she began her UW career 20 years ago with microbiology/vet medicine.

Renewable Resources

The Department of Renewable Resources is welcoming new projects and new faculty members.

Research, teaching, and outreach programs focusing on the identification, assessment, and rehabilitation of disturbed ecosystems in Wyoming, the northern Rocky Mountains, the Great Plains, and the western U. S. will soon operate under the umbrella of the Wyoming Reclamation Ecology Center (WREC).

A proposal for the creation of the center was approved by College of Agriculture Dean Frank Galey, Department of Renewable Resources Head Tom Thurow, Interim WREC Director George Vance, UW Vice President for Academic Affairs Tom Buchanan, and UW Vice President for Research Bill Gern.

In addition to its involvement in the development of WREC, the department has hired three new faculty members. Assistant Professor Timothy Collier, who earned his doctorate in population biology at the University of California,

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Santa Barbara, is involved with research, teaching, and outreach activities concerning the entomology and biological control of weeds and insect pests using insects that feed on them. His research seeks to understand the behavioral and ecological mechanisms that influence biological control and to use this understanding to guide the selection of safe and effective biological control agents. Also joining the department is Assistant Professor Scott Miller, a spatial processes ecologist who earned a doctorate in watershed management from the University of Arizona. Arriving in April will be Associate Professor Dave Williams from the University of Arizona, a plant isotope ecologist who received his doctorate in botany from Washington State University.

Veterinary Sciences

Professor of Veterinary Sciences and international chronic wasting disease (CWD) expert Elizabeth Williams is now a member of a European committee mandated to evaluate whether CWD might carry a risk to humans and animals in the European community. Committee members represent the U.S., France, Austria, the United Kingdom, Germany, Switzerland, and Italy. The first gathering of the committee took place in the fall in Brussels, Belgium.

Williams made a presentation about the disease at the meeting and will continue working with the group members in Europe to develop a full report. The committee is a branch of a European community organization focusing on transmissible and bovine spongiform encephalopathy diseases.

UW students earning degrees in animal and veterinary sciences continue to have a high placement rate for admission to veterinary schools through the Western Interstate Commission for Higher Education (WICHE) funding program. The primary purpose of WICHE is to provide access to educational programs through interstate cooperation.

The Professional Student Exchange Program part of WICHE offers a quota of qualified Wyoming residents access to professional education in the field of veterinary medicine in Colorado and Washington at reduced tuition rates. Financial support is dependent upon continued appropriations from the Wyoming legislature.

Academic Programs

A project that began several months ago aimed at defining the standards of scholarship is continuing with philosophical conversations underway throughout the College of Agriculture about the value of different forms of academic achievement.

Spearheaded by Jim Wangberg, associate dean and director of Academic and Student Programs, dialogue based in part on Ernest L. Boyer's book *Scholarship Reconsidered: Priorities of the Professoriate* has progressed from individual discussions to organized gatherings to department and college-wide talks.

"It is important for each of us to clearly articulate what we mean by 'scholarship,' not in an effort to arrive at a conclusive definition, but so that we, as a college, can gain an appreciation of our different values and a better understanding of the broader meaning of the word," Wangberg explains.

He hosted luncheons with department heads and tenure and promotion committee members to discuss their thoughts about scholarship. "These representatives are now back in their departments doing what they can to advance the discussion among faculty members and to facilitate a dialogue within each area about different forms of scholarship," Wangberg says.

Ideas are being drafted to serve as catalysts for continued college-wide considerations of the roles and importance of teaching, research, and service in academic achievement.

Cooperative Extension Service

The University of Wyoming Cooperative Extension Service (UW CES) is excited about new statewide and international pro-

grams created through the efforts of its state initiative teams. Two examples are the Range College traveling educational programs developed by the Sustainable Management of Rangeland Resources team and the "Enterprising Rural Families: Making it Work" online course organized by the Enhancing Wyoming Communities and Households team.

The idea behind Range College is the development of a series of educational programs, speakers, and resource materials that are available throughout the state to provide information and help to ranchers and farmers about a variety of agricultural issues. Producers can "check out" programs from the Range College "library" and have UW CES educators visit their areas to present the materials. Alternative formats that can be used for Range College offerings include CDs, videotapes, and interactive television shows with speakers in multiple locations. The state initiative team is also responding to the needs of its clientele by custom fitting presentations specifically requested by producers. Range College knowledge is shared on the initiative team's Web site at www.wyorange.net.

"Enterprising Rural Families: Making it Work," an online course about operating businesses, is being taught by CES in partnership with educators in Canada and Australia. It offers a holistic approach that takes into account family relationships and a community's influence on an enterprise. The course gives information about how to integrate family decisions with business decisions. It reveals how a family can divide its time and allocate its resources. Offered for credit as well as enrichment, the state initiative team's online class gives students throughout the world a chance to exchange ideas and experiences.

Agricultural Experiment Station

At the local, state, and national level there is a growing realization of and emphasis on the importance of the coordination of plans and pooling of resources in considering common issues. Across the nation, land-grant universities through their multi-state research funds encourage faculty members to participate in multi-state research and outreach projects. These multi-state projects focus on a particular issue with a common set of objectives and are developed by interested faculty members across several states. Multi-state teams meet annually to exchange information, discuss and establish procedures, and share results.

At the University of Wyoming, presently more than a third of the faculty members in the College of Agriculture participate in more than 30 multi-state projects and activities. The cooperative projects range from basic research in "Reproductive Performance in Domestic Ruminants" to applied research in "Factors Influencing the Intake of Calcium Rich Foods Among Adolescents." Because of these multi-state projects and activities, faculty members from several states join forces through coordinated plans to share information and resources in tackling common issues. The end result is less duplication, increased cooperation, and enhanced use of resources.

Ag Development

The Wyoming State Veterinary Laboratory in the College of Agriculture is a premier center for the study of diseases affecting both livestock and wildlife. The college wants to build on this expertise. Currently a team of experts identifies emerging diseases, determines how to protect important livestock and wildlife resources, disseminates accurate, non-biased information to wildlife management agencies and livestock producers, and trains graduate students in this important area. The University of Wyoming and the College of Agriculture would like to expand the significant work of the lab by creating an endowed faculty position in wildlife/livestock diseases. This endowment would give the college the leverage to attract the very best professionals. Increasing the number of endowed faculty positions within the college is one of the primary goals of the *Distinction Campaign*.

- The campaign goal for an endowed faculty position in animal diseases is $1.5 million.
- Gifts and pledges of $50,000 or more are eligible to be matched dollar for dollar by the state of Wyoming.
- Income generated from endowed faculty positions is used to supplement the base-line funding provided by the state.
- The holder of this important position would work with the Wyoming Wildlife Disease Partnership as well as with livestock industry groups to identify and solve problems facing the Rocky Mountain West.
- For more information on how to help, please contact Anne Leonard, director of development, at aleonard@uwyo.edu or (307) 766-3372.

Soon welcoming people to the College of Agriculture will be the colorful strategic visioning painting that weaves together views of citizens' aspirations for Wyoming's rural landscape in 2012. Created by artist Gary Keimig, the painting shows a blending of agriculture, natural resources, and rural communities.

AG NEWS

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Editor
Vicki Hamende

Layout and Design
Tana Stith

Send comments or suggestions to:
Dean Frank D. Galey
P.O. Box 3354
Laramie, WY 82071-3354
(307) 766-4133
agrdean@uwyo.edu

UNIVERSITY OF WYOMING
College of Agriculture
P.O. Box 3354
Laramie, WY 82071-3354

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