

AgLink



Winter 2005

Linking the MSU College of Agriculture with its Alumni and Friends

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The journey from student to professional is full of hard work

It's practical. It's tough work. This fall it was also wet and cold, but it's also the penultimate course for Land Resources and Environmental Sciences students.

The LRES capstone course requires students to apply everything they've learned to sample, analyze and report on a site with a land management issue. This past fall, the topic was the abandoned Bullion Mine southwest of Helena.

The students began before fall semester, camping for a rainy week at the 7,650 foot site partly in the **Beaverhead-Deerlodge National Forest**. Using Global Positioning System mapping, students pinpointed where they took soil, water and microorganism samples. Then they headed back to MSU for a semester of analyzing data and preparing a report for the Forest Service. The main questions at the site were whether unreclaimed portions are a source of contamination for groundwater and streams, and whether soil and plant systems are recovering on the reclaimed area.

The capstone course's leader is scientist Cathy Zabinski. She put her 34 students into

teams that focused on water, soil or vegetation.

"I want students to make the transition from thinking about themselves as students to thinking about themselves as environmental professionals," says Zabinski.

Evette Allison, who graduated from LRES in December, said "it's a great experience working with a tremendous variety of people and tasks to bring about the final technical report and presentation. It really gives you a much broader perspective of what has to happen (to come) up with solutions to a situation."

Fellow graduating senior Kirsten Boyle was on the vegetation team, but said she liked hearing the "distilled versions" from soil and water teams. "The presentation and writing skills Cathy taught us were really important. I was a pretty good writer when I walked in, but I'm better now."

The Bullion Mine produced gold, silver, copper, lead and zinc between 1897 and 1955. Beginning in the fall of 2001, the Forest Service hauled out tons of mine tailings, then added topsoil and a variety of plants.

by Carol Flaherty, MSU News Service

From the Dean

Take a fast look in the mirror

We have already rolled through another Fall semester, holiday season and started a new Spring semester. Time can go as quickly as the sentence above representing six months! Often times, we do not take the time to step back and think about where we are, where we are going and, ultimately, what we want to be when we grow up or get there, if ever....

Take a look in the mirror, check out your calendar, view your suitcase, or care to glance at your odometer? I periodically do the above just to know what has unfolded for that day or week and what will be coming down the road. Most importantly, given our frantic daily pace, is to take a little bit more than a "fast look" and reflect on what you are doing, how well you are doing it, why you are doing it and whether it can be done better. Take some time to reflect, as we do, on the marvel of our integrated learning and discovery activities and programs at MSU in the College of Agriculture and the Montana Agricultural Experiment Station.



We are constantly striving to be better through innovative efforts in the classroom; creation of new knowledge in the classroom, lab, field or larger scale landscape; and engaging the outside world with our expertise to enhance activities and decision-making in agriculture and natural resources systems. Do we get it right always? Do we have all the answers?

Are we done? NO! Do we expend 110% effort? Will we change to get better? Will we be accountable and provide quality? YES!

One key aspect is to be fully committed to excellence. The bar is always being moved and is being moved upward. We fully intend to be running up the bar by being responsive to current issues and pushing hard towards a better future. The *we* is *us*, individuals at MSU...faculty, staff, students...looking in the mirror at the past and current reality, then jumping into an engaged future with both feet, springing to excellence.

A handwritten signature in black ink that reads "Jeff Jacobsen".

Jeff Jacobsen, Dean and Director

2004 Outstanding Agricultural Leaders honored at MSU



2004 Outstanding Ag Leaders and spouses wait to be presented at halftime during the Nov. 13, 2004 MSU football game. From left: Don Fast of Glasgow; Ruth and Chuck McGlothlin of Park City; Gene Surber of Bozeman (in white hat); Dean Jeff Jacobsen; Bob (in black hat) and Helen Hanson of White Sulphur Springs; Vickie Surber in background. MSU photo by Carol Flaherty

Cheeseburger ambassador spreads the word to kids

Lacey Lingohr carried a perfect cheeseburger into Ridge View Elementary School. Almost a foot thick, the cheeseburger consisted of a giant sesame seed bun, a beef hamburger patty, fringes of lettuce, Swiss cheese, cheddar cheese, tomato, pickles, onions, ketchup and mustard. It was so big that Lingohr kept it in a zippered red bag that looked more suitable for a pop-up tent than a sandwich.

"Where do we get buns?" the MSU junior asked almost 50 **Belgrade**-area third graders as she rebuilt the burger in front of them.

"From wheat," one answered.

"Where can we find wheat around here?" Lingohr continued.

"A farm," another responded.

So it went, as Lingohr used a bun-colored pillow, a hamburger pillow, a tomato pillow and slices of yellow, orange, red, green and white felt to show the students how a cheeseburger and some version of fruit can supply nutrition from every group in the traditional food pyramid. One student claimed she already knew about the existence of more than 400 kinds of cheese. The children had strong opinions about the taste of tomatoes, but weren't so sure if they were a fruit or vegetable.

"I thought they finally decided it was a vegetable, but I think there's probably going to be ongoing controversy over that," Lingohr said later as she waited to give another cheeseburger presentation.

Such is the life of the 2004-2005 Cheeseburger Chair for the MSU Cattlewomen. Elected last spring, Lingohr gives and arranges "Perfect Cheeseburger" presentations to third graders around the Gallatin Valley. The long-time 4-H and FFA member from **Malta** loves cheeseburgers

and grew up on beef, but admits to preferring a different title.

"We don't really like being called 'The Cheeseburger,'" Lingohr said. "So I came up with 'Youth Beef Educator' or 'Beef Education Chair.'"

The animal science major would like to prepare a preschool version of the presentation and cook cheeseburgers in the classroom. She's thinking about using colored wafers to build a snack that looks like a cheeseburger. In the past, she's given raw steaks to teachers and gift bags to students.

"I like to help kids better understand agriculture," said Heidi Arlian, adding that some children think milk comes from refrigerators and grocery stores. Arlian of **Big Timber** was one of three MSU Cattlewomen who assisted Lingohr at Ridge View along with Cortni Guesanburu of **Harlowton** and Kristy Kohl of Wisconsin.

Lingohr said she remembers fondly the years she gravitated to her grandparents' ranch to raise steers and rabbits for 4-H. She went there to work on horsemanship, cow-calf and gardening projects.



Lacey Lingohr holds a perfect cheeseburger at Ridge View Elementary School near Belgrade. MSU photo by Carol Flaherty.

"I have always loved animals. I like the work, being outside," she said.

Lingohr worked at the Bowdoin National Wildlife Refuge for the past two summers, looking for song bird nests in a research project for the U.S. Fish and Wildlife Service.

During the school year, Lingohr earns money by carrying mail at MSU. She also eats cheeseburgers, but doesn't specify how many.

by Evelyn Boswell, MSU News Service

Ag Appreciation Weekend raises over \$13,000 for students

Agriculture Appreciation Weekend events at Montana State University grossed over \$13,000 for ag student activities this year. The annual event, hosted by MSU's College of Agriculture, includes silent and live auctions and a raffle. The money will be used to support agricultural student activities, says Lynn Speakman, who coordinated the event.

All College of Agriculture student groups can request funds raised during Ag Appreciation weekend. So far, the following organizations have requested and been granted funds: Block & Bridle Club to attend the National Block & Bridle Convention in Denver, Ag Ambassadors to help them attend the National Ag Ambassador Conference in San Luis Obispo Calif.; Range Club to help members attend the International Society of Range Management meeting in Fort Worth Texas where they will compete in the Undergraduate Range Management Exam, Plant ID and speaking contests.

In 2004, individuals and merchants donated over 300 items for the silent auction, ranging from silver jewelry and tea to clothing and motor oil. "A special thanks to all of our sponsors and donors," said Speakman.

Campus

COA undergraduate enrollment up

The College of Agriculture's student enrollment is increasing. According to the Fall 2004 student enrollment report, the College gained 19 students to reach 769 undergraduates. The number of transfer students entering the College is also up. For more information, contact Heidi Hart, recruitment and retention coordinator, at 994-1662 or agstudents@montana.edu.

Ag Days attracts 700 competitors

A record number of students registered for 2004 Ag Days competitions, representing 40 Montana schools and counties. Held Nov. 11-13 on the MSU campus during Ag Appreciation Weekend, new additions included parliamentary procedure, an entomology interactive display, farm business management and a campus scavenger hunt. Thirty MSU students were in charge of contests and events, with many other students, faculty and staff helping out. The College sponsored all awards.

FFA convention returns to MSU

Montana's state FFA convention will be hosted at MSU April 6-9, following one year in Great Falls. The annual event typically attracts several hundred high-school-aged students, many of whom, according to the College's recruiting coordinator, end up attending MSU. The 2005 convention celebrates the 75th anniversary of FFA and features Baxter Black and other special guests. For more information or to volunteer, call Heidi Hart at 994-1662.

New home for entomology collection

MSU's entomology collection was moved recently to Marsh Laboratory after more than 80 years on the top floor of Lewis Hall. Considered the largest natural history museum in Montana, the collection contains several million insects, spiders and other specimens. Marsh Lab allows more space for the collection, which was started in 1898. An open house will be held in the future.

MSU Library seeks farm and ranch family papers



Cutting oats, circa 1900, on the Mill Farm, owned by Louis Josephsen, Ridgeland, Dawson County, Montana. (Photo Courtesy of Merrill G. Burlingame Special Collections, MSU Libraries.)

Historic diaries, letters, photographs and financial documents created by Montana agricultural families now rest in the Merrill G. Burlingame Special Collections at the Montana State University library, and the library has space for more.

Since 1965, the library has collected farm and ranch family papers, which date back to the late 1800s. Special Collections Librarian Kim Allen Scott hopes that the materials keep coming because donations supplement the rich store of research publications on all phases of ranching and farming.

"The primary source materials by farm and ranch families help researchers understand the historical context in which the science of agriculture is studied," said Scott, the university's archivist. "Aside from the obvious cultural data, researchers in agricultural economics can peruse the financial records of farms and ranches to establish patterns in commodity production and pricing."

He noted that environmentalists find clues to the many subtle changes in climate and land use that affect agricultural pursuits in the Treasure State.

"In short, the wealth of information that can be gleaned from a healthy collection of farm and ranch papers is limited only by the imagination and research needs of the professionals who choose to use them," he said.

Scott said that the documents gain in value as they are supplemented with other materials as collecting activities continue. There are no unimportant bodies of materials, he said.

"The nuggets of information to be mined from these papers are truly gold for researchers and a benefit for the entire state," Scott said. "It is important that farmers and ranchers take care to assure that these valuable records be preserved."

For more information contact Scott at (406) 994-5297.

by Jean Arthur, MSU News Service

MSU study takes new approach to meat safety

The road to insight can lead through a feed yard, according to researchers at Montana State University.

Kim Skinner of **Hall**, for example, is studying the relationship between a strong immune system in calves and safer meat in the grocery store. The approach is a new one in the fight against *E. coli*.

Skinner, a master's degree student in ruminant nutrition, used 24 heifers that were newly weaned and came from MSU's Red Bluff Research Ranch west of Bozeman. In the livestock yards at MSU's farm in Bozeman, the heifers wore magnetic keys around their necks and lifted their heads so the keys swung against the doors that kept them from their feed. To open the doors, they simply pushed forward after the key opens the lock. Half of the calves ate regular feed. The other half ate feed that had been fortified with extra minerals and vitamins.

The point is to find out if scientists can produce safer meat by enhancing nutrition and boosting the calves' immune system, Skinner said. The goal is to find a way to protect people from *E. coli* 0157:H7 that can contaminate meat and cause consumers to become sick. Most *E. coli* is shed through animal feces.

Focusing on early nutrition is different from traditional efforts that concentrate on sanitation in packing plants to reduce the rate of *E. coli* shedding, said John Paterson, Skinner's advisor and the MSU Extension Beef Specialist. Experts usually address post-harvest conditions.

"We are trying to develop different management strategies, so this *E. coli* actually never makes it into the human diet," Paterson said.

To find out if they're successful, the researchers will measure blood components to look at antibody levels. They'll also measure fecal concentrations of *E. coli* and take liver biopsies, Paterson said.

by Evelyn Boswell, MSU News Service



*Kim Skinner feeding the calves in his study of immune systems and *E. coli* shedding. MSU photo by Erin Raley.*

Research

MSU herbicide-tolerant wheat licensed

An herbicide-tolerant winter wheat developed at MSU has been licensed to WestBred, LLC, a **Bozeman**-based plant breeding company with six associate seed companies around the state. WestBred now has about 12,000 bushels of the seed in the ground, primarily in the state's **Golden Triangle** and **Judith Basin** areas. Most of what will be harvested next summer will be certified seed available to Montana growers for fall planting. The variety, called MT1159CL, is referred to as a Clearfield winter wheat line because it incorporates a technology developed by BASF chemical company that makes the plant tolerant to imidazolinone herbicide. Demand for the variety is fairly high in Montana as growers struggle to manage infestations of jointed goatgrass and other grassy weeds in wheat fields.

Ag Innovation Center now open

MSU and the Montana Agricultural Experiment Station are partners in Montana's new Agricultural Innovation Center, which will help ag producers turn their value-added products into successful businesses. Duane Johnson, head of the Northwestern Ag Research Center at **Kalispell**, is the Center's program director and Perri Walborn its associate director. Regional resource centers are in **Havre**, **Joliet**, **Wolf Point**, **Ronan** and **Lewistown**. The project is partially funded by a \$1 million USDA grant. Would-be entrepreneurs can get help with marketing plans, feasibility studies, production processing and product testing. For more information, call Walborn at (406) 322-9876.

Controlling grain kernel hardness

MSU researchers discovered how to control the hardness of cereal grains and are ready to license the finding for additional development in wheat, barley and corn. The researchers found that the genetic expression of two proteins regulate the relative hardness or softness of wheat. Controlling grain hardness can lead to better grain quality, storage and production, as well as to the development of new and improved human food products through attributes such as increased starch recovery in corn milling, finer textured flours and better barley malting.

International ag trading is one focus of Native American econ classes

Assiniboine, Sioux, Crow and Northern Cheyenne are studying global agricultural markets and other issues through MSU offerings at the tribes' local colleges.

Ag Econ and other College of Agriculture faculty have worked with students at Fort Peck College in **Poplar**, Little Big Horn College on the **Crow Agency** and Chief Dull Knife College in **Lame Deer**. Offerings include

crop and livestock marketing for Native American ranchers and land inheritance issues on reservations.

MSU's ag economists also have several research programs with the tribal colleges that have outreach education components and provide research opportunities for tribal college students, says Vince Smith, the economist coordinating the work.

MSU's ag economists have worked closely with Montana's Native American colleges since 1999. Now, more MSU faculty provide on-site and distance education on range ecology, livestock nutrition, range management, ag education and ag business, as well as provide risk management education for American Indian farmers and ranchers.

The ag econ offerings to Native Americans have "tremendous spillover" to other ag econ offerings to producers throughout Montana, said Smith. Recently, Smith and Economist Jim Johnson presented findings from tribal contracting research at the USDA Economic Research Service in Washington, D.C.

Jody Smith (no relation to Vince Smith), the ag education director at Fort Peck, said the classes "have been wonderful. . . it's helped us build a lot of capacity at Fort Peck to do more."

An additional benefit may accrue to



From left: Gail Whiteman, Little Big Horn Community College; Vince Smith and Jan Bowman (in white hat of MSU); Jim Hafer of Chief Dull Knife; and Vernon Whiteman talk during the Crow Fair last summer. Photo by Marty Frick.

tribal students coming to MSU.

"We have several students transferring out of my program and going to MSU in Bozeman. Having them know some of the people there by working with them in short-term classes should help them acclimate and succeed at MSU-Bozeman," said Jim Hafer, head of the ag program at Chief Dull Knife College.

Gail Whiteman, ag development coordinator for Little Big Horn College, also cited the students' interaction with MSU pros as helpful while the students consider continuing their education. "The professors also get to experience the reservation lifestyle, which gives them a greater understanding of the culture and hardships of Native American youth."

by Carol Flaherty, MSU News Service

Scott Family Foundation pledges \$500,000 to Animal BioSciences Facility

The Dan and Jeanne Scott Family Foundation has pledged \$500,000 toward a new Animal BioSciences Facility at MSU.

"My family has deep roots in Montana and four of my five children graduated from MSU. We see this project as very significant for the future of the cattle industry and for MSU," said Dan Scott. The foundation includes Dan and his wife Jeanne Scott of **Dayton, Wyo.** and their children Randy and Lynette Scott of **Billings**; Riki Davidson and Trink and Tom Morss of **Parkman, Wyo.**; Ron and Audra Scott of **Sheridan, Wyo.**; and Risa Scott of **Orange, Calif.** Dan is the retired general manager of the family ranch, the Padlock Ranch, which stretches across the Montana/Wyoming border.

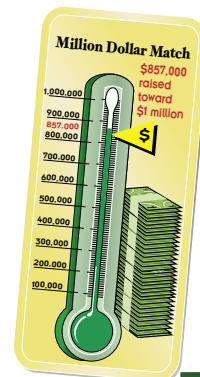
The Animal BioSciences Facility, a partnership between USDA-Agricultural Research Service and MSU, will include special classrooms for range science, information technology, genetics and physiology. The facility will be a national center for beef cattle genomics with state-of-the-art research labs and multi-purpose distance learning extension facilities, which will allow MSU faculty to deliver programs to on- and off-campus learners using the latest media technology.

For more information, contact Sandra Germann at 994-7671 or Dean Jeff Jacobsen at 994-3681.

The Million-Dollar Match Campaign is picking up steam

and current contributions total \$857,000. The Montana Legislature allocated \$1 million for renovations and remodeling at the state's Agricultural Research Centers if MAES could raise a matching \$1 million in donations.

Call 406.994.3681 to contribute!



HELP
MAKE
THE
MATCH!

Let us get to know you

My husband Mike and I had the opportunity to attend the National Finals Rodeo in Las Vegas last December. In the past, anytime we left without the kids, we worried about “what would happen to them if something happened to us?”. This year we finally contacted an attorney and wrote a will to name guardianship for our children. Now we have peace of mind knowing that our children will be cared for. Of course, this doesn’t mean we plan to depart in the near future, but if something should happen, our will provides protection for our children.

I believe wills are important for everyone, whether children are small or grown, and whether we are young or old. Marsha Goetting, MSU Extension Family Economics Specialist, has some great publications that are free through Extension and on the Web at <http://www.montana.edu/extensionecon/publications/estate.html>. Your attorney can help create this document for a nominal fee, and the assurance it brings is well worth the cost.

This leads me to a recent phone call from an attorney notifying me that the College of Agriculture, through the MSU Foundation, was the recipient of an estate from Northern Montana. I had helped work on the language for the will about four years ago but never knew the donor. We were only allowed to correspond with the attorney. Now I’ve found out this gentleman was a “quiet cowboy” in his 90s. He had no family, nor much schooling. He wanted to leave what he had to College of Agriculture students to help with scholarships and student activities.

While I am happy at the opportunity this will present for our hard-working students, I am also a little sad. Questions come to mind, “if we had been allowed to know

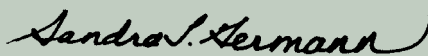


Sandra Germann,
Development Director

this gentleman, would he have enjoyed being a part of the College of Agriculture while he was living?” Or, “would a visit to say “hello” once in a while by myself, the dean, a faculty member or a student have been special to this man?” Or, maybe it could have been as simple as making sure he received AgLink so he could read about College happenings throughout the year. Instead, he is now gone and we are the recipient of “what he left behind.” Yes, we are grateful that he provided funds for student activities and scholarships and, yes, our students have a great need for his help. But we didn’t “know” him, nor did he know us, and this could have been different.

If you or someone you know is considering, or already has included making MSU Foundation (for the MSU College of Agriculture, Letters & Science, Health & Human Development or any of the other MSU colleges) a recipient in your will, please let us know! I truly think some people hold off because they don’t know “how much will be left” or for other personal reasons. However, if we know ahead of time, we can help with the terminology so that a bequest goes where you intend. And, we can answer your questions and involve you in our college while you are alive to enjoy it! My favorite was a lady who said she was leaving us something in her will but she was concerned that she might “need it all and then we’d get nothing.” I told her that would be great, if needing it all meant she lead a long, happy life. Her intent was honorable and we’d like to know her. If I can be of help, please give me a call, or drop me a note. I’d like to get to know you too.

At the very least, get that will written!



Sandra Germann
Class of ‘89 (BS), ‘91 (MA) AgEd/
Extension

Development

College names new development board members

The MSU College of Agriculture named several new members to its development board at a November meeting during Ag Appreciation Weekend. Current and new members include:

- Tim Rask*, **Scobey**, College of Agriculture student
- Taylor Brown, **Billings**, Northern Ag Network
- Gary Broyles, **Rapelje**, producer
- Caren Coffee, **Miles City**, Stockman Bank
- Tim Gill, **Helena**, Montana Livestock Ag Credit
- Bruce Glennie, **Glasgow**, Wells Fargo Bank
- Ross Fitzgerald, **Fairfield**, MSU Extension Service Fire Services
- Mark Lalum, **Kalispell**, Cenex Harvest States Inc.
- Tyler Lane, **Shelby**, Toole County Extension Office
- Dave McClure, **Lewistown**, Montana Farm Bureau Federation
- Jay Meyer, **Stevensville**, producer
- John Schutter, Jr., **Manhattan**, producer
- Monica Switzer, **Richey**, Montana Farm Bureau Farm Safety Committee
- Ron Ueland, **Bozeman**, WestBred, LLC
- Dave Buschena*, **Bozeman**, MSU Ag Economics professor
- Jeff Jacobsen, **Bozeman**, MSU College of Agriculture/AES Dean and Director
- Jim Peterson, **Bozeman**, MSU College of Agriculture, interim Associate Dean for Development and Outreach
- Sandra Germann, **Bozeman**, MSU College of Agriculture Director of Development

* one-year appointment

Knapweed crashes in 2004

In past years, Jim Story only had a short trip to collect spotted knapweed data. As a Western Ag Research Center entomologist who rears and studies insects that feed on knapweed, the open land near the **Corvallis** ag research center has been an extended lab with plenty of knapweed.

No more.

Spotted knapweed populations crashed near Corvallis in 2004. Adding to the good news was that biocontrol agents also seem to have wiped out the small but threatening nucleus of diffuse knapweed in **East Helena**, says Story.

Story has been documenting substantial reductions of spotted knapweed density at biocontrol agent release sites for several years, but the population crash at unmanaged knapweed sites caught him by surprise.

“All unmanaged lands in this area were infested 10 years ago, but those same sites don’t have much knapweed today,” he said. “We’re seeing up to 95 percent reductions.” Story believes the crash is due primarily to introduced root-boring insects, though drought is also playing a role.

“Spotted knapweed is usually very drought tolerant, but it may be vulnerable to drought when its roots have been attacked,” says Story. “The fact that we’re not seeing much young knapweed probably is due to seed eating biocontrol insects we introduced many years ago.”

“Biocontrol is proving extremely effective against knapweed. The next challenge will be to restore sites to desirable plants. Now the knapweed is being replaced by cheat grass at most sites.”

He says the knapweed crash was “pretty amazing,” but there still is work to do for millions of infested acres. The root borer doesn’t fly so needs help to get to new sites in any reasonable time frame. Story’s group rears about 30,000 insects a year.

The crash of the East Helena diffuse knapweed is thought due to a seed head weevil introduced by Story and USDA-APHIS in the early 1990s. “I’ve been waiting 30 years to see these kinds of results. It’s pretty exciting.”

Story coordinates his work with various agencies, including USDA APHIS, the Extension Service, BIA, the BLM, the US Forest Service, private landowners and county weed supervisors. For more information, contact a local Extension agent or Story at 961-3025.



Jim Story

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