



Ag Link



Spring 2003

Linking the MSU College of Agriculture with its Alumni and Friends

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Coal bed methane water researcher swims in controversy as he tests the waters

Most people don't set out in life with a goal of carting nearly a million pounds of soil 200 miles to meticulously watch it do its thing. And they rarely set out to work for 20 years on a project and then be called a "terrorist" and other epithets.

It just happens when you are Jim Bauder.

Bauder is MSU's Extension Service soil and water quality specialist and a professor in Land Resources and Environmental Sciences. When he started studying irrigation water in the early 1980s, he didn't know that it would put him in the middle of a fiercely debated issue when the 20th Century changed to the 21st. So heated is the topic that when he was part of a National Public Radio forum last year, a caller termed him and another participant "terrorists."

In the 1980s, Bauder began studying Powder River water and the area's well water, which are often saline and sodic. Now

that area is a focal point of coal bed methane development, and people are asking what such water will do to the soil, putting Bauder's knowledge of the area's soils and water in demand.

A mid-sized well can produce 17,280 gallons of water per day for 18 months before the gas flow becomes significant. Bauder says that, in some cases, the water can be useful, but in other cases the water is so salty and sodic "that we have not been able to find a way to manage it" without adverse environmental impacts. Such site-specific characteristics explain why Bauder's studies require soil from the area in question.

Methane production in the Powder River area is expected to last about 20 years, but "when the methane is gone, the rancher will still be there trying to make a living from the land," says Bauder.

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Artists needed for juried show in October

Artists should begin preparing work now for a juried art show to be hosted by Montana State University's College of Agriculture this fall.

Artists can submit slides of up to three entries for the show between now and the deadline for slide submissions Sept. 12. The Art Show precedes Ag Appreciation Weekend Oct. 31-Nov. 1, and the art should depict aspects of agriculture or natural resources.

The slides will be judged, and the top three artists in each category will be asked to submit the original work, says Carol Flaherty, who is coordinating the exhibit for the college. Categories include watercolor, oil, sculpture, pen or pencil sketch, multimedia, color photography, and black and white photography.

"Artwork can be returned to the artist or donated in whole or part to the silent auction held that weekend that benefits students," says Flaherty.

In 2002, artist Yvonne Jewett of Willow Creek took third place in the MSU Ag Appreciation Days Art Show. with this oil painting, "Paint Colt."



The chosen art will be displayed at the Exit Gallery in MSU's Strand Union Building Oct. 20-31.

For more information, contact Flaherty at (406) 994-5136, carolf@montana.edu or check on the college web page: <http://www.montana.edu/agriculture/General/ArtShow.htm>.



Excellent students—and teachers

Three outstanding students in Montana State University's College of Agriculture were honored as were their faculty mentors during the Alumni Association's "Awards for Excellence 2003" earlier this spring.

Stefani Balison and Stephanie Wallin majoring in Animal and Range Sciences and Jennifer Jeresek majoring in Land Resources and Environmental Sciences were chosen outstanding seniors in the College of Agriculture. In turn, the students were asked to choose which faculty member had provided exceptional guidance and inspiration, both academically and personally.

Wallin chose James Berardinelli as her most outstanding mentor (left); Jeresek chose Jeff Jacobsen (center) and Balison chose Clayton Marlow (right).

Coal bed methane, cont. from p. 1

A variety of agencies support his research, which includes working with agencies in six states.

This year he's working with 14 MSU students on CBM-related projects. The experience is useful for students when they go job hunting, says Bauder, because half of the world's irrigated land has salty or sodic soils. Working with him are undergraduates Allison Levy of New York, Krista Pearson of Colorado, Jake Oslind of Wyoming, Linzy Browning of Circle, Natalie McGowan of Stevensville, and Jason Drake of Vermont. So are master's degree students Amber Kirkpatrick of Bozeman, Shannon Phelps of Missoula, Kim Robinson of North Carolina, Holly Sessoms of Wyoming, Nikos Warrence of New York and Keri Garver of Michigan. Tara Fisher of Helena and Belgrade, and Kristin Keith of Denver are working on CBM-related doctorates.

"It is not our agenda to develop coal bed methane or to discourage its development. It is our objective to do good research, train good students, and find answers and solutions that support or contribute to sustainable management practices," said Bauder.

Is there money for Montana farmers who capture global-warming gases?



The buzz is just starting. It says that you can make money by trapping greenhouse gases in the soil. You hear phrases like “banking carbon credits” or “carbon sequestration.”

Is there a new agricultural market out there?

Probably, say Montana State University - Bozeman economists. Montana has over 17 million cropland acres, and most is suitable for additional carbon storage, says MSU Economist Susan Capalbo. She and other MSU researchers have a \$1.3 million grant as part of the Consortium for Agricultural Soils Mitigation of Greenhouse Gases. Eight other universities, a national lab and several USDA agencies are also participating in this \$15 million project.

The basic idea is simple. Carbon dioxide-producing industries would pay farmers whose crops pull carbon dioxide from the atmosphere as part of photosynthesis. Farmers would use reduced-tillage systems that increase carbon storage in the form of soil organic matter.

Capalbo says MSU economists are determining farmer costs, how to document the amount of carbon stored and its value. That will help businesses determine whether

buying such storage from Montana farmers will be economical as a means of offsetting their emissions.

MSU crop rotation researcher Perry Miller is working with six Montana producers in the Golden Triangle to determine how much carbon is stored in their soils under various tillage systems and crop rotations.

Miller, soil nutrient management researcher Rick Engel, remote sensing researcher Rick Lawrence and economists John Antle, Susan Capalbo, Linda Young and Duane Griffith hope to determine whether the emerging carbon market will offer enough incentive for Montana producers to participate. Griffith, an MSU Extension Service farm management economist, will develop software for Montana producers to use to estimate the costs of practices designed to store carbon and the amount of carbon stored.

Lawrence is analyzing satellite images to find a way of proving the amount of carbon stored. Lawrence, Miller and graduate student Ross Bricklemeyer think they can get the cost of measuring carbon storage down to pennies per acre. For more information on the study, visit www.casmgs.montana.edu

Alien bugs

Sometimes insects from other countries are more effective fighting weeds than those from elsewhere in the United States, says Jeff Littlefield from MSU's entomology department. Littlefield found that flea beetles from Switzerland were more suitable to Montana than flea beetles from Oregon, for example. Gall mites from northern Greece worked better in Montana than gall mites from Texas. Littlefield and his students released flea beetles in northwest Montana to fight tansy ragwort. They're experimenting with gall mites in several locations around the state in an effort to wipe out field bindweed. The flea beetles are being used primarily on U.S. Forest Service land. The gall mite work is being done largely on Bureau of Land Management land.

Not in the stars

The future may not be written in the stars, but perhaps some futures can be predicted from the weather. Take the gamble a grower makes when he chooses whether to plant barley for malt, hay or grain. It's difficult to figure the odds on “making malt,” a term referring to producing the type of barley that makes good beer. Darrin Boss and Gregg Carlson of the Northern Agricultural Research Center hope their work near Havre will let them predict the best choice in time for growers to profit from the information. They are testing whether or not past weather and current seeding data allows an earlier prediction of malt quality. The work is funded by the Montana Board of Research and Commercialization Technology.

Nyquists give back to ag students

Giving back. That's why an MSU alumnus and his wife donated a duplex to the College of Agriculture last fall. Proceeds from the sale of the real property went to establish a permanent scholarship endowment, the Wyman E. and Ruth M. Nyquist Meritorious Scholarship in Agriculture. The award will go to merit scholars working towards a degree in agriculture.

"MSU did an excellent job of training me, and I am more than glad to repay some of what was done for me," said Dr. Nyquist. He added that the tax benefits were very significant, and that federal laws encourage charity gifting. He said they are able to carry that part of the charitable deduction not used last year to this year, allowing the couple to utilize the full extent of tax credit for their gift.

Wyman Nyquist graduated as valedictorian of his class at MSU in 1950 with a bachelor's degree in agronomy. Though Ruth Nyquist did not attend MSU, both her parents, C.A. Suneson and Anna Nordquist, did. A bench on campus is named in their memory. Wyman and Ruth met while Wyman was earning his PhD at the University of California, Davis. After serving for two years in Japan while in the U.S. Air Force during the Korean War, Wyman accepted a position at Purdue, where he worked with plant genetics and breeding for 35 years.

Wyman's interest in agriculture began while growing up on a farm in the Scobey area of northeast Mon-



Wyman and Ruth Nyquist

tana. His family raised cereal grains, mostly wheat and barley, with some flax.

A poignant memory for Wyman is the year wireworms killed a lot of their wheat seedlings. The crop had to be replanted, making it late. With favorable rains, plant growth was lush. Stem rust became a serious disease problem, and only two acres were harvested out of hundreds planted. The loss was devastating to the family.

Years later, as a student at Montana State College, Wyman learned in class that the crop failure could have been avoided through plant breeding. Ironically, while working on his doctoral degree, Wyman's research topic was stem rust.

The MSU College of Agriculture sends a heartfelt "Thank You" to the Nyquists for their generous gift for merit students in agriculture!

Alumni gather at Range meeting

Montana State University alumni gathered Feb. 4 at the Society for Range Management meeting in Casper, Wyo. It was the first MSU alumni reception held at the annual meetings in nearly 50 years. About 90 MSU graduates, young and old, reminisced and met fellow alums.

The event, sponsored by the MSU Alumni Association and the MSU College of Agriculture, kicked off with food and conversation. Mike Tess, MSU Animal and Range Sciences department head, gave an overview of the department and the college. MSU alumnus Chuck McGlothlin followed with a summation of the current scholarship program in the College of Agriculture and informed alumni of the new Ryerson, Payne, and Taylor scholarship being created in honor of three well-known past faculty members. Donations in their honor are currently being accepted.

Ag Appreciation Weekend to be held Oct. 31-Nov. 1

Join us this fall for the annual Ag Appreciation weekend festivities! Note that this year, the Ag Days contests for high school students will be held on a different weekend.

Oct. 31 (Friday):

- Art show
- Sponsor reception

Nov. 1 (Saturday):

- Art show
- Tailgate and football game (Cats vs. Sacramento State, 12 Noon)
- Silent auction

• Boots and Bow Ties banquet

Nov. 13-15 (Thursday - Saturday):

- Ag Days contests, MSU campus

Planning for new Animal BioSciences Facility begins

Plans are now underway for the Animal BioSciences Facility. The newest building on the MSU-Bozeman campus will house the College of Agriculture's Institute for Biobased Products and Food Science, and the Department of Animal and Range Sciences.

Current plans call for the building to be nestled into the space between Leon Johnson Hall and Linfield Hall, with open walkways designed to connect the three agriculture buildings while facilitating interaction between instructors and students.

The facility will include specialized classrooms for meat and meat processing; range science; information technology; and genetics and physiology. Other components include multi-purpose, high-tech extension education facilities, which will allow MSU faculty to deliver educational programs to on- and off-campus learners using the latest media technology. Finally, the facility will include state-of-the-art research laboratories.

"Montana has been at a comparative disadvantage because so many of our agricultural commodities are transported out of state for further processing," said Mike Tess, department head of Animal and Range Sciences. He said the goals of the Institute for Biobased Products are to develop new products from commodities and create novel processes that add value. The Institute will also study food safety and assess risks associated with new ventures.

During an era when many universities have shifted away from production agriculture, said Tess, MSU is committed to applied livestock production and natural resources management and to the people employed in those industries. Tess said the building design will celebrate Montana's rich heritage in livestock and natural resources.

The building was authorized by the 2001 Montana state legislature. Organizers are currently seeking leadership-level gifts to secure the project. Naming opportunities are available. For information, call Tess at (406) 994-3721, Sharron Quisenberry at (406) 994-2681 or Sandra Germann at (406) 994-7671.



The new building will be located between Linfield Hall and Leon Johnson. Specially designed walkways will facilitate movement between all three agriculture buildings.



Preliminary sketches include a "great room" entryway that would celebrate Montana's rich heritage with natural materials like exposed timber and stone. Open spaces will encourage interaction between instructors, researchers and students.

As I write this column, over 200 scholarships have been awarded to students through the College of Agriculture for fall 2003. Associate Dean Don Kress says every student with a GPA of 3.0



Sandra Germann, Development Director

or higher who applied earned a scholarship. Amounts given out this year are less than last year due to the recent adverse market conditions. We thank our generous alumni and friends who continue to step forward and fund scholarships during these challenging economic times. Some who have endowments that are currently not earning enough to fund the scholarship have given an additional annual gift to cover all or part of the scholarship. This certainly says something for the caliber of our alumni and friends and the importance they place on education! Smaller gifts are pooled to create scholarships as well, so every gift is important! We will give special recognition to everyone who gives a gift to this special "Going the Extra Mile for our Students" scholarship drive.

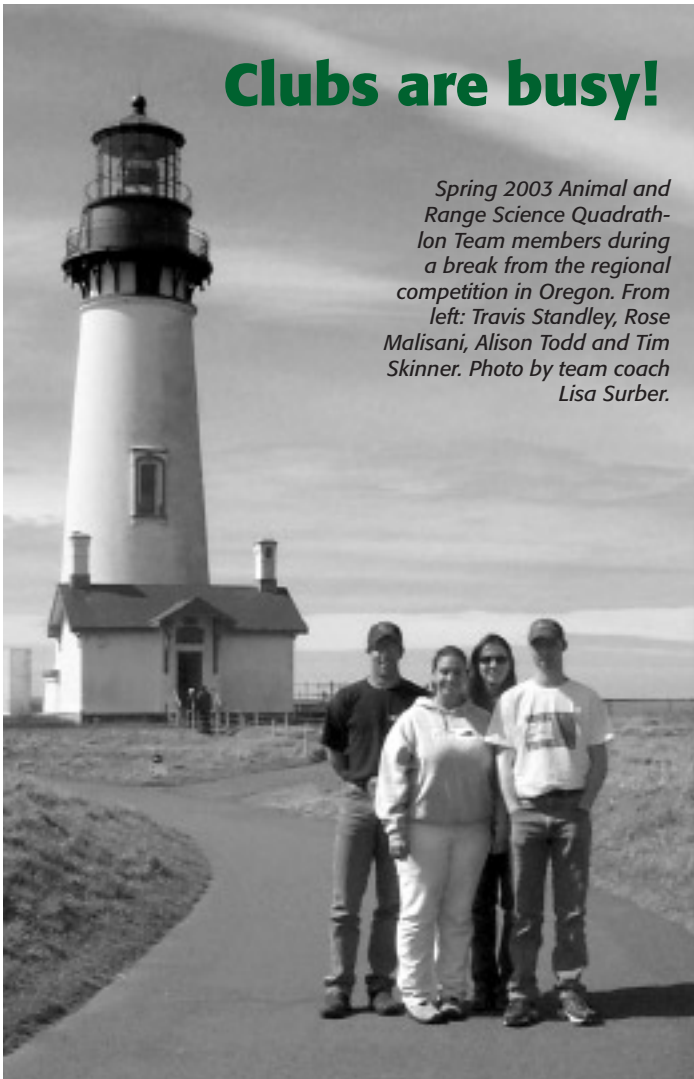
On Graduation Day, May 10, 160 undergraduate agriculture students will earn their baccalaureate degree. The College's guest speaker is Whitney MacMillan, past president of Cargill, Inc. and a recent MSU Honorary Degree recipient. Join us at 7 a.m. for continental breakfast and at 8 a.m. in the North Gym for ceremonies. See you there!

Sandra Germann

**Class of '89 (BS), '91 (MS)
AgEd/Extension**

Clubs are busy!

Spring 2003 Animal and Range Science Quadrathlon Team members during a break from the regional competition in Oregon. From left: Travis Standley, Rose Malisani, Alison Todd and Tim Skinner. Photo by team coach Lisa Surber.



Students in MSU's College of Agriculture find their free time can be as busy as they choose, with 13 student organizations available. Here's a review of what a few of the clubs have been up to this year.

Agricultural Communicators of Tomorrow members are gaining experience by producing a monthly newsletter for students, faculty and friends of the College of Agriculture. Issues include reports from club members who are studying overseas, interviews with current students and facts about agriculture. Members will soon begin selling advertising, and are progressing towards an on-line newsletter. Several members helped produce the *FFA Legend*, a daily newspaper distributed during the state FFA convention, held in Billings in April.

This year's activities of the **Pre-Veterinary Medicine Club** have included the club's annual dog wash (which made a big splash) and a visit to Washington State University's Veterinary Teaching Hospital. Club members fielded teams for Bowling for Kids Sake, the Agricultural Quadrathlon, Midnight Madness and Fun on the Farm, among other activities. They also visited area high

schools, three local veterinary hospitals and several special lectures, said Rebecca Mattix, advisor to the club.

For **Academic Quadrathlon**, undergraduate teams participate in four events: a laboratory practicum, written exam, oral presentation and Quiz Bowl. In the lab practicum, the team demonstrates its ability to perform physical skills and usually involves a species such as beef or swine or a disciplinary area such as nutrition or meats. Each team writes one exam, dividing the questions as they wish. In the oral presentation, the students must discuss a topic dealing with animal agriculture. In Quiz Bowl, all questions relate to animal agriculture.

MSU's local contest is held each January. The regional quadrathlon is hosted by alternating universities in March. MSU's team went to regionals at Oregon State University, where they competed against nine other western universities. Since 1994, MSU has won the regional Quadrathlon twice and placed second once.

MSU's **Horseman's Club** hosted two Intercollegiate Horse Show Association shows and a spring cutting horse show. About 20 members traveled to other shows. Five members competed at regionals in California. The club enjoys twice-weekly riding practice at Four Dot Equine Station near Belgrade, has work projects at MSU's Bob Miller Pavilion and sponsors speakers on equine-related topics. In addition, the group held its annual trail ride this spring.

Collegiate Cattlewomen has three main projects. One is a monthly presentation at an elementary school. Using a giant pillow cheeseburger as a prop, members give a short presentation called "The Perfect Cheeseburger." The club also has a campus beef promotion in the fall, when members hand out free beef samples and answer questions.

Members attend national and state conventions, have fundraisers, barbecues and more. The club holds an educational forum each spring. This year the club's educational forum was on *E. coli* in conjunction with the Montana Livestock Forum and Nutrition Conference.

Collegiate FFA starts each school year with training. On the state level, training is in Helena, with two additional trainings at National FFA in June. Members can participate in the annual Alumni Camp in Highwood. In July, state officers attend a three-state commodity tour. FFA Officers give workshops at 4-H Congress and the Farm Bureau Campout and prepare for District Leadership School. Officers also participate in several fairs. During the fall, officers provide help, visits and workshops at events such as MSU Ag Days, FFA Extravaganza and NILE. They attend the National FFA Convention and as many agriculture association events as possible. State officers (generally MSU students) host a state leadership conference.

New Ambassadors chosen for '03-'04

New student ambassadors have been chosen for Montana State University-Bozeman's College of Agriculture.

Ag Ambassadors are a group of MSU students who travel through Montana and neighboring states to promote awareness of the importance of continuing education as well as career opportunities in agriculture.

"Ambassadors visit many of the areas' high schools as well as talking with other groups who may have questions about either MSU or agriculture," says their advisor Lynn Speakman.

To schedule an ambassador visit to your school or community, contact Speakman at (406) 994-5744.

New ambassadors for the coming year are (alphabetical by town, of Montana unless otherwise noted):

Tyler Traeger of **Bainville**; Mariah Baumann of **Billings**; Michaela LeVeque of **Cascade**; Marie Franko of **Cascade**; Kyla Hofeldt of **Chinook**; Kyle Groh of **Circle**; Carli Lofing of **Columbus**; Julie Wagner of **Harrison**; Heather Hartman of **Highwood**; Kyra Drga of **Ismay**; Kaci Herzog of **Ismay**; Joylynn Kauffman of **Kalispell**; Shawna Acord of **Manhattan**; Chance Nelson of **Miles City**; Heather Rimel of **Missoula**; Joe Vanek of **Moore**, and Meghan Ellis of **Independence, Wisc.**

They join the following students who will continue serving as ambassadors:

Shaina Hofeldt of **Chinook**; Bryan Hunt of **Clyde Park**; Lexi Newman of **Columbus**; Kim Skinner of **Hall**; Ryan Fisher of **Kalispell**; Katie Shampeny of **Manhattan**; Sarah Brown of **Salinas, Calif.**; Tim Rask of **Scobey**; Beth Spizziri of **Shawmut**; Mandy Willson of **Colfax, Wash.**; Salvador Madrigal of **Mexico**; Shane Leland of **Ridgeway, Penn.**

The graduating Ambassadors are: Sarah Wilkins of **Condon**, Becky Kossler of **Gallatin Gateway**; Kyle Schmitt of **Geysler**; Tim Skinner of **Hall**; Karl Drga of **Ismay**; Ramey Lunceford of **Stevensville**; and Danielle Rau of **Marysville, Calif.**

MSU offers youth horsemanship camp July 21-25

MSU's first-ever Youth Horsemanship School will take place in Bozeman July 21-25. Participants will develop and practice riding skills and learn other horsemanship topics.

Youth will stay and eat together on the MSU campus. Participants must bring their own horses, which will be housed in open, individual stalls. Workshops will take place in three outdoor arenas and one indoor arena, allows a low student/instructor ratio.

Sandy Gagnon, MSU Extension Equine Specialist, is director of the school, and instructors are experienced youth educators, many of whom have taught equine science courses at MSU. All were selected for their ability to relate to youth in a positive, enthusiastic manner.

The school is limited to 60 students aged 9-17, who are accepted on a first-come, first-served basis. A chaperone must accompany each group of six students of the same gender. Students who are not attending with a group or need a chaperone may contact their local MSU Extension agent to team up with another group.

Tuition is \$280 per student; \$150 per chaperone. Fees cover instruction, lodging, meals, stalls and T-shirt. The school is self-supporting, and organizers will strive to keep costs down so the school is available to all Montana youth.

For more information, call (406) 994-7953 or visit the Web: <http://www.animalrangeextension.montana.edu/Articles/Equine/2003-youth-school.htm>.



Mud football is a traditional part of Testy-Fest. Calves are castrated in the morning. College of Agriculture students bring in a band that night and the featured entre is fried "oysters."

This mud football game occurred in September 2002.

CALENDAR

MAY

10 MSU Commencement

JUNE

11-14 MSU Extension Women's Week on Bozeman campus

26 MSU Sustainable Pest Management field tour, Froid

JULY

8 Western Triangle Ag Research Center field day, Conrad. 1pm

9 Northern Ag Research Center field day, Havre. 9am-2pm

10 Central Ag Research Center field day, Moccasin

23 Eastern Ag Research Center field day, Sidney. 8:30a.m.

AUGUST

7 Western Ag Research Center field day, Corvallis.

Studying people (partially) for animals' sake

On a molecular level, our immune system is very similar to that of other animals. The similarities give MSU's Department of Veterinary Molecular Biology opportunities it wouldn't have otherwise. As grant funding to study human diseases has increased, VMB's capacity to study livestock disease has greatly expanded.



Allen Harmsen

"We have a human health focus, but the diseases we choose to focus on are generally ones that are also important for the livestock industry," says Dept. Head Allen Harmsen. "The human disease work we do doesn't distract from work on animal diseases. It enhances the work on animal diseases, because funds to study animal diseases are otherwise very limited."

In one sense, you could say they're studying human diseases for animals' sakes.

VMB researchers look for areas

where diseases have parallels in humans and livestock. Tuberculosis is the number one killer in the world. Cattle get TB, too. Brucellosis is a problem in livestock, but also a public health problem in many countries. Anthrax threatens livestock and humans, and is getting more attention because of the bioterrorist threat.

VMB researchers are studying most of these subjects under human health grants.

"If we have a disease that is virulent in livestock but not in people, or in people but not livestock, understanding this difference can help us rationally target a vaccine against the disease," says Harmsen.

Basically, to quote from the World Health Organization's web site: "Animal and human health are inextricably linked."

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