



# Ag Link



Fall 1999

Linking the MSU College of Agriculture with its Alumni and Friends

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## Scientists are sorting out the stomach-wrenching Puzzle of Norwalk Virus

Norwalk virus looks like a blue ball. But it is no toy.

This dangerous virus can infiltrate your stomach and intestinal cells, causing vomiting and diarrhea. Norwalk can be spread by contaminated food, water or from person to person.

Norwalk symptoms usually pass in three to four days, though young children and the elderly are more at risk, says researcher Michele Hardy. Hardy is a virologist with MSU's Department of Veterinary Molecular Biology.

Her goal is to learn enough about the virus so that researchers can make a vaccine to prevent it.

However, learning about this virus has not been easy. "Norwalk doesn't grow in the lab or in animals, only in humans," says Hardy. "That makes studying it very difficult."

The Norwalk virus was discovered in 1972, but until it was cloned in 1990 researchers had learned little about it. Once it was cloned, scientists began

to learn about its genetic structure.

"In the absence of being able to grow the virus, cloning it lets us do many of the tests we need to do to study it," said Hardy.

Scientists now believe

Norwalk virus causes more than 95 percent of the food-borne illness not caused by bacteria like *E. coli*.

One of the reasons Norwalk is so common is that



Michele Hardy takes a photo of Norwalk virus proteins synthesized in the lab.

Carol Flaherty

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## Hort is Hot *Students flocking to MSU horticulture program*

"We're experiencing a huge surge in growth," says Richard Pohl, associate professor of landscape architecture in the Plant Sciences Department.

The number of undergraduate students in the program has tripled since 1993 and now claims about one-fifth of the College of Agriculture's undergraduate student population (814 as of fall '98).

Preliminary enrollment figures for fall '99 show 172 undergraduate students in the program, with 91 in landscape design, 65 in horticulture science and 16 in turfgrass science, says Pohl.

That compares with 57 total students in the fall of '93.

Pohl speculates that the landscape design program may be attractive because of the building boom in western Montana. Landscaping and horticulture production opportunities are increasing around here, he says. He adds that many of the program's graduates "find good positions right here in Montana."

"This area attracts a lot of students from out of state," he says. "We also get a lot of students who switch over from

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*Ag Link* is a twice yearly publication of the MSU College of Agriculture.

**Co-Editors:** Sandra Germann (formerly Thibault), College of Agriculture, and Tana Kappel, Communications Services

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Sam Loudon, a senior in landscape design, has designed a garden at Langohr's Flowerland in Bozeman as part of his summer internship.

Linda Best

# From the Dean

**By Sharron Quisenberry**  
Dean of the  
College of  
Agriculture



It is an honor to have been selected as the Dean of the College of Agriculture and Director of the Montana Agricultural Experiment Station. Part of the reason I came to MSU-Bozeman is the high quality of the faculty and staff. I look forward to working with them to strengthen the College as we strive to ensure a bright future for Montana's citizens.

We have a tremendous opportunity to expand MSU's role in Montana by ensuring educational access to our citizens, promoting lifelong learning, producing new knowledge through research, supporting family and community development and providing leadership on agricultural and natural resource issues.

A strategic plan is underway in the College to focus our education and research programs. This will enable us to better allocate our resources in providing Montanans with quality programs in education, research and extension. We seek your input and partnership in this process. Your input will help us focus and strengthen our programs.

I want to thank Interim Dean of the College, Stuart Knapp, for his leadership



Stu Knapp (left) and Clayton Marlow

and dedication to our education and research programs, and Clayton Marlow for his 10 years of service as the college's associate dean of resident instruction. Both men deserve lavish thanks for a job well done.

## High-feed-value barleys offer options for feeding Montana calves in-state

The demand for barley as a livestock feed should receive a big boost this year.

This spring, Valier, a new high-feed-value, high-yielding barley developed at MSU-Bozeman, was released to Montana foundation seed growers. A similar variety will soon be released.



Jan Bowman and Tom Blake show off a handful of the new high-feed-value barley.

These new barleys perform as well as the best barleys, "easily 10 percent better than Harrington, the most widely grown variety in Montana," says MSU barley breeder Tom Blake.

Yet what makes them unique is the higher feed value which puts them on par with corn-based rations. "They offer a 10 to 12 percent increase over traditional

barleys in average daily weight gain," says Blake.

Blake and animal nutritionist Jan Bowman received federal funding for the unique project in 1996. It is the only program in the world that incorporates feed value for feedlot cattle as a barley breeding selection criterion.

Traditionally, feed barleys have been malt barleys that didn't gain industry acceptance, or barleys that had a yield advantage but no malting quality.

The high feed value of these lines could mean a premium for barley growers. Even without a premium, the increased yields could be worth an added \$6 million annually to state barley producers, Blake estimates.

About 70 percent of barley produced in Montana is sold as livestock feed — but not for feeder calves. Most Montana feeder calves are shipped to out-of-state feedlots.

Using these barleys, producers could economically feed their calves in-state. Growers of the new barleys would benefit from the increased demand.

For information: Tom Blake at 406-994-5055 or Jan Bowman at 406-994-5563. A longer article is on the web at: <http://www.montana.edu/wwwpb/ag/barley.html>

## New Faces



Don Kress is the college's new interim associate dean of resident instruction.



Norm Weeden becomes the head of the Plant Sciences Department September 1.

Jim 'Mick' Mickelson joins the Southern Ag Research Center September 1. His focus is weed management for cropping systems in the Yellowstone River Valley.

Edward Schmidt will join the Veterinary Molecular Biology Department on September 1. He will focus on animal transgenics.

Jane Boles will join the Animal and Range Sciences Department October 4. Her focus is meat science.

Rick Funston joined the Animal and Range Sciences Department as Extension beef specialist. He is based at the Fort Keogh Livestock and Range Research Laboratory at Miles City.

Rick Lawrence and David Ward have joined the Department of Land Resources and Environmental Sciences. Lawrence will do research using remote sensing technologies. Ward is a microbiologist.

## The Northwestern Agricultural Research Center marks its 50th year

Ag producers in northwestern Montana have a variety of crop options to choose from. That's because the area has good soils and more rainfall — up to 20 inches annually — than other areas of Montana.

But it's also due to the 50 years of research at the Northwestern Agricultural Research Center near Kalispell, part of Montana's Agricultural Experiment Station headquartered at MSU-Bozeman.

The center got its start in the 1940s when area farmers and ranchers donated \$18,850 to launch the "Northwestern Branch Station." The 1947 state legislature authorized the purchase of 75 acres. Today the center evaluates crops on 225 acres of some of the richest soil in Montana.

One of the station's early impacts was in potato research. C.W. Roath, the station's first superintendent, developed fertilizer programs that led to the elimination of "hollow heart," then a major threat to the state's potato crops. Roath also did research on seed size and placement. Between 1949 and 1963, potato producers in Lake and Flathead counties realized nearly a 60 percent increase in production.

In 1949, fertilizer field tests were also conducted on alfalfa, oats, barley and clover. Roath demonstrated that fertilizer applied to alfalfa the year of seeding provided significantly higher yields than building up the rate of fertilizer over the life of the stand.

Research on small grains has been the station's "bread and butter," says Vern Stewart, the station's first agronomist and second superintendent. In addition to testing cereal grains for quality and yield, the station once owned a flock of registered Columbia sheep, which were used

to evaluate the nutritive and economic advantages of these grains.

Weed control has also been a major focus. Weed scientists are evaluating the control of wild oats in small grains, as well as other crop weeds.

Today center researchers are evaluating around 350 varieties of cereal grains, and numerous varieties of alfalfa, canola, peas, lentils and mint. Last year, the center began evaluating herbs, partly because low mint prices are encouraging area mint growers to look for alternative crops, says Leon Welty, the center's new mint oil distillation facilities — purchased by area mint growers — will now also be used to distill herbal oils.



*Vern Stewart, Northwestern's second superintendent, stands in a canola plot during the center's July field day. He discussed the station's history during a 50th anniversary lunch.*

For information about the NW Research Center, call 406-755-4303

### Norwalk Virus

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an infected person can infect others for up to a week after the symptoms have disappeared.

The disease can often run uncontrolled through groups of people. The Center for Disease Control reports that 55,000 people at a major hotel got sick from the virus being passed around over 34 days.

Hardy has received a five-year grant from the National Institutes of Health to look at the protein functions necessary for the virus to replicate, a precursor to learning how to block the virus from reproducing.

Until a vaccine can be developed, the best prevention is careful hygiene.

For more information, contact Michele Hardy at 406-994-4705.

### Stomping & chomping

Preliminary data show that sheep grazing wheat stubble can reduce wheat stem sawfly larvae by 85 percent. This looks like a win-win situation for wheat and sheep producers. The wheat producer wins by reducing wheat stem sawflies, which is the most damaging pest in Montana wheat production. The sheep producer gains winter and early spring forage. Now researchers want to determine if there is a yield improvement in the crop after sheep have fed on the previous crop's stubble.

**Contact: Sue Blodgett at 406-994-2402.**

### New knapweed control

Researchers have found a way to revegetate spotted knapweed-infested lands that is simpler, cheaper and more effective than past methods. The technique involves seeding and applying herbicide in one pass in the fall. In tests, picloram (Tordon 22K) was the most effective herbicide. Luna pubescent wheatgrass was the most successful species for re-seeding; the most successful native species was bluebunch wheatgrass. Managed properly, the revegetation should last 12-20 years, while still keeping the weeds out.

**Contact: Roger Sheley at 406-994-5686.**

### GPS gives wild oat clues

Seeding rate may become a more important weapon for weed control. Researchers have been studying wild oat control using information from yield monitors linked to Global Positioning System satellites. Results show that wild oats are worst where the density of wheat is least. Either the wild oats are keeping the wheat from maturing, or a seeding problem is allowing the wild oats to dominate. If the latter, producers might be able to minimize the impact of wild oats by correcting seeding skips or increasing seeding rates in certain areas.

**Contacts: Bruce Maxwell at 406-994-5717 or A.J. Bussan at 406-994-7025.**

# Agriculture in the Global Economy is focus of new educational initiative

During the next two years, students at MSU and two tribal colleges will have a unique opportunity to learn about agriculture in the global economy.

A new \$222,000 grant from the USDA Cooperative State Research, Education and Extension Service will enable an interdisciplinary team of MSU professors to develop three new courses. The courses will not only be offered to MSU students. Using distance delivery technologies, the courses will simultaneously be available to students at Dull Knife Memorial College and Fort Peck Community College.

One course, "From Conception to Consumption," will evaluate the beef industry from its science to international marketing. Animal scientist Pete Burfening and ag economist Myles Watts are organizing this course.

The second course is "Agricultural Science and Economic Development in Limited Resource Agriculture: Implications for Technology Transfer." This course is

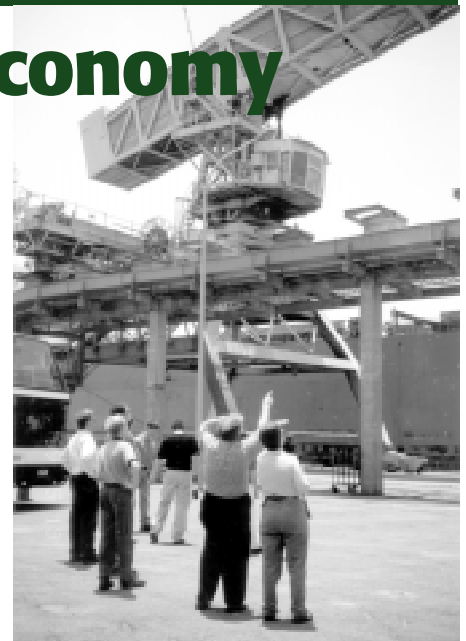
being organized by Marty Frick, in the agricultural education program, and Norm Peterson, director of the Office of International Programs.

The third course, "Follow the Grain," has already been offered in the spring of '99. Students in the course traveled to Taiwan for 10 days to learn first-hand what happens to Montana grain that is shipped to the Far East. This course will again be taught by Debra Habernicht, head of the Cereal Quality Laboratory, and agricultural economist Vince Smith.

"Follow the Grain" was the prototype for the new courses, says Smith, because it helped build connections for the students between the theory and practice of agriculture.

"This is an exciting opportunity for our undergraduates to learn about the global ag marketplace," says Sharron Quisenberry, the dean of the College of Agriculture.

The idea for the initiative came from



MSU ag economist James B. Johnson points to a giant auger at the Far East Asian Grain Terminal in Taichung, Taiwan. MSU students and faculty members traveled to Taiwan last May as part of the "Follow the Grain" course.

Stuart Knapp, former acting dean of the college. He'll continue to be involved, says Smith.

For more information, contact Vince Smith at 406-994-5615.

## Ag-ed student learns the ropes at KMON Radio

There was no "typical day at the office" for MSU student Jennifer Vukonich this summer as she completed an internship at KMON radio in Great Falls.

For three months, Vukonich, of Joliet, Montana, did news writing, broadcasting, editing, advertising and promotions — all in a real-work setting. She never knew what might be on the schedule next. One day, Vukonich said, she might be learning the ins and outs of advertising; the next she was on location at the state fair or at the Canadian border to interview agricultural producers protesting trade laws.

For Vukonich, a senior in agriculture education/extension option, the internship was an opportunity to learn more about communications and tie together the concepts she learned in the MSU College of Agriculture.

"My goal was to experience a couple of

different areas of ag communications, and decide if this is something I might want to do," she said. "It is helpful to be able to use what I've learned in classes and see how it will apply to real-world experience."

Brent Stanghelle, KMON's farm director, worked closely with Vukonich during her internship. Stanghelle said that each year for the past three years, the station has hired an intern from MSU's College of Agriculture. He added that the students work three months during the summer and then often return to help with



Jennifer Vukonich learns about broadcasting.

## Students

MAGIE, the Montana Agricultural Industrial Exhibit, to be held next January 20 - 22, 2000 in Great Falls.

Vukonich said the internship tied in well with her college education, which has also included a one-semester exchange at Oklahoma State. Vukonich added that background information she learned in MSU ag classes was particularly helpful as she interviewed producers from various backgrounds.

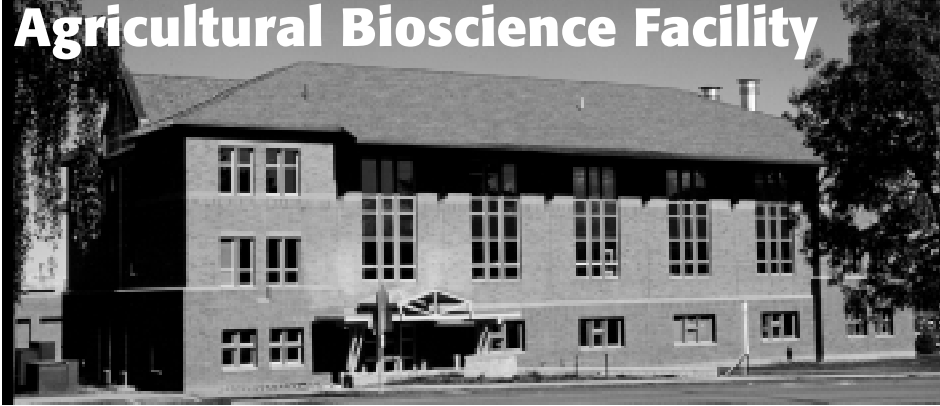
"I've taken classes for three years, and now I can see how it really works," she said. "This really helps put it into perspective."

Vukonich is the daughter of Merrylee Vukonich, MSU Extension agent in Carbon County. Van Shelhamer, professor of agricultural education, is Vukonich's academic advisor.

For information about MSU's ag education program, contact Van Shelhamer at 406-994-3693.

## Alumni and friends support the new Agricultural Bioscience Facility

Victoria Enger



The dedication of the Ag Bioscience Facility will be Friday, November 5, during Ag Appreciation weekend on campus. A tour is included.

The Samuel C. and Hazel West Litzenberger Grain Quality Laboratory was recently named in the Ag Bioscience Facility.

The Litzenbergers met on the MSU campus in 1937. Hazel worked in the USDA grasshopper lab on campus and Samuel taught and was advisor to the MSU Agronomy and Crop Judging Team.



Samuel Litzenberger (seated front left) coached the 1939 Agronomy Team that took first place in the Intercollegiate Crop Judging Contest at Portland. Team members were (from top left) Bernard Toenyas, Enos Anderson, George Loomis (alternate) and Gordon Thompson (seated).

Under his leadership, the team set two first place records at the Pacific International Livestock Expedition in Portland, Oregon in 1939 and 1941.

Other rooms in the facility are named after the following contributors: Whitney and Elizabeth MacMillan; John and Grace Schutter Sr. and family; Gene and Jane Thayer; John R. and Hazel M. Drewiske; and the Montana Wheat and Barley Committee.

Over 1,284 individuals and 752 households have contributed to the facility, says Sandra Germann, the college's development director. And yet, further funding is still needed, she says.

There are still opportunities to name rooms or labs in honor of donors. For information, contact the college's Development Office at 406-994-7671.



### Lou and Mary Spain

of Bozeman have recently set up an endowment to help maintain the MSU Entomology Collection. Contributions can be made to this endowment through the MSU Foundation or College of Ag Development Office.



By Sandra Germann  
Director of Development

MSU's fiscal year ended June 30<sup>th</sup> with over \$989,200 in gifts being disbursed through the MSU Foundation to the College of Agriculture. These gifts came **from you** as endowments, bequests, outright gifts and deferred gifts. **Thank you for your generosity!** Your gifts help assure quality programs worthy of our students.

Fall is an exciting time on campus at Montana State University-Bozeman and for the College of Agriculture. I invite you to campus for a special weekend, Ag Appreciation Weekend, November 5th and 6th. Many fun-filled activities are in store for you. See the insert in this edition of *AgLink* for a schedule of activities and **get in on the fun!** Proceeds will benefit the college's **Student Activity Fund**.

The college's annual fund campaign kicks off with the phonathon the last week in September. Student callers will be asking for your support. I encourage you to give if you can. Even the smallest gift makes a big difference and your gift is tax deductible. You can also set up a tax-deferred endowment, trust or scholarship fund prior to December 31<sup>st</sup>. Please contact me if I can be of assistance.

Thank you to all who responded to the first edition of *AgLink*. Your comments are valuable and welcome!

On behalf of the College of Agriculture, I sincerely thank you for your continuing support as we move forward into the new millenium.

*Sandra Germann*

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

For information on ways you can contribute to college programs, contact Sandra Germann at 406-994-7671. Or check the college's web site at <http://www.montana.edu/agriculture/>

## Ag Art Sought

The College of Agriculture is seeking art that depicts agriculture or natural resources for its juried art show during Ag Appreciation weekend November 5 and 6.

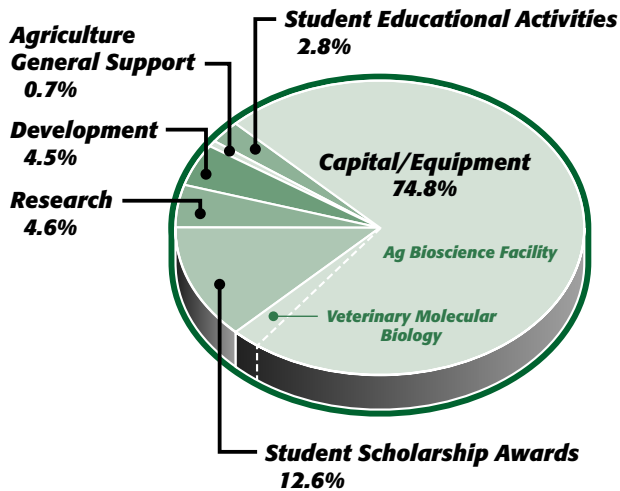
The divisions include photography, water color, oil, pen or pencil, and sculpture. Entries are being accepted until October 22.

For more information, contact Lynn Schledorn at 406-994-5744.

## College of Agriculture

Gifts Disbursed through the MSU Foundation  
Fiscal Year 1998–99

Total Disbursed Amount = \$989,270



## Hort is Hot

Continued from page 1

general studies and architecture programs.”

Students in the program have lots of opportunities for learning on the job. “We’ve had good success placing students in internships all around the country,” says Pohl.

Sam Louden, a senior in landscape design, is now completing a summer internship with a Bozeman nursery company. The Kalispell native has a different take on why students are attracted to the program. “This generation was raised in the ’80s. We’re not just after a big paycheck. We’re looking for fulfilling jobs, something real where we can create beauty.”

Beauty aside, the reality of accommodating the increasing demand has been a challenge. “Our classes are full and there are not enough teachers and classroom space,” says Pohl.

More teaching help is on the way, though. The department has enlisted Extension horticulturist Bob Gough to teach a class this fall, and hired Carol Asleson as an adjunct professor. Asleson, who has a master’s in landscape architecture from Iowa State University, is the daughter of former MSU Dean of Agriculture Joe Asleson. A search is also underway to replace turf grass professor Rob Golembiewski.

For more information, contact Dick Pohl at 406-994-5048.

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# Ag Link



Fall 1999

Linking the MSU College of Agriculture with its Alumni and Friends



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