

Programs & People

University of Idaho
College of Agricultural and Life Sciences

Winter 2012



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Celebrating 100 Years of 4-H in Idaho

Where we've been, what's ahead, and celebration plans

Water Stewards

Monitoring health of Idaho's streams **8**

Action Scientists

Better seeds • Help for dairies
Healthier potato chips? **20**

Juliet vs. Stripe Rust

Savvy advice, early warning,
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Our cover girl, Isabelle, 6, from northern Idaho, when asked what she likes about being a 4-H Cloverbud, said, "I can't wait to be a BIG 4-Her!! I want to do the projects and have my own lamb!"

Already, for 4-H, she planted flowers, tie-dyed t-shirts, made a fruit smoothie, learned about animal health, sewed a pillowcase, and, best of all, "went to Latah County Fair!" The ribbon is for her Cloverbud memory book.

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LETTER FROM THE EDITOR

Researching 100 years of 4-H in Idaho (p. 10) has been both a delight and challenge. A special thanks to Clifton E. Anderson for quotations from early Idaho 4-Hers, found in his *History of the College of Agriculture at the University of Idaho*. I love the peek they give, not only into early 4-H, but also into our state. 4-H in Idaho is mentioned as early as 1912—just 22 years after Idaho became a state in 1890.

I wasn't in 4-H, so I was especially impressed with the variety and quality of challenging experiences 4-H gives Idaho's children. We sent Boise freelance writer **Diane Ronayne** and photographer **Pam Benham** to capture some of February 2011's **Know Your Government** conference in Boise. In slide shows (see our online magazine at www.cals.uidaho.edu/pnp), you'll see 4-Hers from most Idaho counties—well dressed and hard at work—debating bills and trying judicial cases with as much aplomb as our elected officials. **Teen Conference** in June impressed me for its intense schedule of workshops, athletics, and even community service (cleaning up heavy tree debris on campus), always while showering friendship on each other. View it through the eyes of Idaho 4-Her **Amber Bucknell** online.

CALS innovation helps keep our state strong and relevant. Innovation is why we're here. Nearly every CALS professor and UI Extension member routinely innovates as part of the job. Our pages are full of innovations—many profound and worth millions of dollars: **Juliet Marshall** helped southern Idaho wheat growers survive a rare stripe rust outbreak; our scientists, working with Oregon and Washington, helped solve huge tri-state soil erosion problems and now focus on how to grow crops if our climate does change (p. 18).

We join with the **University of Idaho Office of Research and Economic Development** in celebrating CALS faculty whose innovations won recognition and are resulting in new jobs and products. Illustrator **Noah Kroese** shows them as heroic action figures (p. 20). Find more innovation in our ScienceUpdates (p. 5), in **Ariel Agenbroad** invitation to experience a week in her life (p. 32) and as **Ashley McFarland** continues training volunteers to help agency officials track the health of Idaho's streams (p.8).

MARY ANN REESE, Editor
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University of Idaho College of Agricultural & Life Sciences

Programs & People

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Hula Hooping it up is Sandra Evenson, professor and interim director of CALS' Margaret Ritchie School of Family and Consumer Sciences. Her department's student registration has nearly doubled in recent years, "because our programs are so relevant." Also, Evenson has three articles in Berg Publisher's 10-volume *Encyclopedia of World Dress and Fashion*, new in 2010. Read one at our online P&P at www.cals.uidaho.edu/pnp.



photo by STEVEN MARTINE



dean's view

JOHN HAMMEL

In this issue we celebrate the remarkable impact of 4-H on Idaho's youth.

Fans of 4-H are many. Gov. C. L. "Butch" Otter recalls his 4-H time as a happy, educational experience. So do many others who have excelled as Idaho leaders and citizens. We call it 4-H Youth Development to emphasize that it promotes leadership, responsibility, citizenship, and community.

Anyone who has been around 4-Hers knows they're outstanding. Some 4,000 volunteers help Idaho's 36,000 4-H members learn about healthy living, science and technology, community service, public speaking, and other lifetime skills.

A study several years ago showed that 4-H members are less likely than non-4-H teens to engage in risky behaviors like drinking, smoking, drugs, gang activities, and other threats to their and our future wellbeing. For taxpayers, it is important to note, too, that 4-H operates on a shoestring. Our county programs routinely employ just one person full-time to help organize the volunteers who lead 4-H clubs throughout the entire county. Some UI Extension educators devote part of their jobs to 4-H.

Collaborative funding. University of Idaho Extension and 4-H are based in the College of Agricultural and Life Sciences because it best reflects the cooperative relationship combining federal, state, and county funding. Our 2012 celebration of 4-H's first stirrings in Idaho coincides with another important anniversary. The state-federal partnership to benefit agriculture took root in 1862 when Abraham Lincoln signed the bill that created the national land-grant university system. Its goal was to offer the common man an education in the agricultural and mechanical arts to help the United States prosper. We did. America's farmers have long ranked as the envy of the world, producers capable of feeding hungry mouths worldwide.

CALS' Department of Agricultural and Rural Sociology landed some \$3 million from the Northwest Area Foundation to help 49 small Idaho towns pursue training and play a greater role in their destinies.

In northern Idaho, people in rapidly urbanizing Kootenai County look out over beautiful green forests, thanks in part to UI Extension Forestry's efforts to work with forest professionals and family forest owners who control nearly half of the county's forested area. Good management promotes more timber and supports local economies.

In agriculture, we still help our growers compete in global markets, whether it is improving their operations with new potato and grain-growing methods, better varieties that need less fertilizer, water, and pesticides, or improving storage practices.

The bottom line is 4-H members learn skills that benefit themselves and our communities. Forest owners, farmers, town leaders, and many other community members find UI Extension a great source of quality, unbiased information. All of us in Idaho benefit.

bookshelf

CRITTER MANAGEMENT

Meadow Voles and Pocket Gophers: Management in Lawns, Gardens, and Cropland

They're small and furry and can dig elaborate underground byways to feast on your root crops, flowers, alfalfa, pastures, and other agricultural crops.

They are meadow voles and pocket gophers, the bane of homeowners and commercial crop producers alike. Combined or alone, forage losses from them are estimated at 10 to 50 percent in pastures and alfalfa. They also can damage orchards, nurseries, turf farms, ornamental flower plantings, landscapes, lawns, and vegetable gardens.



These rodents damage plants by eating roots, trunks, stems, tubers, and leaves. Their tunneling habits also cause damage, including tripping humans and animals. Large mounds of soil left by rodents—particularly gophers—can dull knives and discs on harvesting equipment. Soil from mounds may contaminate hay bales. Underground rodent burrows and tunnels interfere with irrigation practices and equipment, and the burrowing encourages weed invasion through ground disturbance.

This 16-page photo-illustrated booklet helps you to understand life cycles of the species, identify their runways, and suggests ways to get rid of them. New in June, this 8 1/2 x 11 booklet was researched and written by University of Idaho Extension educators and specialists Danielle Gunn, Fort Hall; Ronda Hirnyck, Boise; Glenn Shewmaker, Twin Falls; and Lance Ellis, Fremont County; plus Sherman Takatori, Idaho State Department of Agriculture. Get this Pacific Northwest Extension Publication (PNW 627) for \$6.50 plus S&H from calspubs@uidaho.edu, or download it for free at www.cals.uidaho.edu/edComm/catalog.



photo by BILL LOFTUS

Finding best grains if Idaho's climate changes

Aberdeen Research and Extension Center-based wheat breeder Jianli Chen will have a lot of wheat to analyze as part of a five-year project to assess the water- and fertilizer-use efficiency of 3,000 wheat and barley lines.

The lines are part of the National Small Grains Collection maintained by the USDA Agricultural Research Service at Aberdeen as a genebank to represent the global diversity of small grains.

Chen's \$750,000 research is part of a \$25 million project led by University of California at Davis to help farmers nationwide prepare for climate change. "It will be a big job because we will be growing three plots of each line, so we will be monitoring 1,800 plots for each of the next five years," Chen said.

Chen's preliminary research into drought stress supported by the Idaho Wheat Commission helped her to become a key part of the grant by conducting the phenotypic screening for water- and nitrogen-use efficiency.

Aberdeen provides a perfect location for the project, she said. Because the region's rainfall averages 10 inches a year, grain production relies on irrigation. Simulating drought conditions simply means turning off or reducing the water supply.

Support from the USDA-ARS Special Collaborative Agreement Grant allowed Chen to prepare for the new project by starting to grow the wheat and barley lines in 2009 to increase the amount of seed needed for her research.

The project will be the first effort in the genebank's history to measure the water and nitrogen efficiency of various wheat and barley lines in the collection.

Contact JIANLI CHEN at jchen@uidaho.edu.

by BILL LOFTUS



Minimum size increase could help Idaho potato producers boost profits

Idaho fresh-potato revenues could increase by \$130 million annually, and Idaho dehydrated potato revenue could increase by \$20 million, if the minimum size for fresh market potatoes were increased from 4 to 5 ounces.

That's the finding University of Idaho Extension Economist Joe Guenther and CALS graduate student Whitney Plant Goodwin, both of Moscow, shared with the Idaho Grower Shippers Association at a summer conference in Sun Valley.

"That size shift would divert an average of 5 million cwt from Idaho's fresh to its dehydrated potato market each year," said Guenther, also a professor in CALS Department of Agricultural Economics and Rural Sociology. "Our studies show that decision could make sense because the dehydrated potato market is more elastic than is the fresh potato market."

The Idaho Potato Commission hired the university economists to conduct this study, "because of the recent downward trend of the demand for fresh potatoes in the marketplace," said Guenther, a trend troublesome to both the Idaho potato industry and Idaho's economy.

The UI study and consumer research will be presented to shippers, growers, and processors "during our November Whistlestop Tour to seek further feedback," said Frank Muir, head of the Idaho Potato Commission. "Both study and tour feedback need to be considered together as the Idaho potato industry decides on this important issue."

Contact JOE GUENTHER at jguenthn@uidaho.edu.

by MARY ANN REESE



photo by BILL LOFTUS

E. coli vaccine advances, puzzle remains

WHAT'S BAD FOR BEEF EATERS MAY BE GOOD FOR THE BEEF CATTLE, says Carolyn Hovde Bohach, a CALS microbiologist and School of Food Science faculty member.

That is no consolation to those who have suffered devastating losses to *E. coli* O157:H7, but it reflects the difficult puzzle the bacterium presents. Bohach talked about her work with *E. coli* as part of the Science on Tap series in Moscow sponsored by the Idaho IDeA Network of Biomedical Research Excellence, which she directs.

As part of long-term research on a potential vaccine for cattle against *E. coli* O157:H7, Bohach has discovered how the bacteria colonize in the gut of cattle. The bacterial serotype is feared for its lethal threat to people, particularly the young and old.

Cattle and a host of other animals can carry with no ill effects the *E. coli* strain so threatening to people. It appears that O157:H7 may even benefit cattle, providing immunity from bovine leukemia virus.

Questioned about cattle producers' exposure to O157:H7, Bohach noted studies show healthy rural residents from both beef and dairy areas carry antibodies for higher exposures to the bacteria than do city folk. That suggests people can develop immunity.

Conditions in meat processing plants have improved to lessen the risk of O157:H7 contamination, but she advised against eating sprouts because growing conditions multiply even a tiny risk. Bohach championed food irradiation as an ideal solution, adding that all foods aboard U.S. Navy submarines are irradiated to combat disease threats and protect shelf life and nutritional benefits.

Contact CAROLYN HOVDE BOHACH at cbohach@uidaho.edu.

by BILL LOFTUS



Young students focus on Idaho-grown foods

Bannock County students from seven elementary schools who attend EFNEP afterschool programs from October through April will learn to cook Idaho-grown foods as part of The Year of Idaho Foods (YIF), a celebration of some 90 food crops grown in Idaho.

"We'll teach the children to make healthy, tasty dishes using potatoes, beans, fruits, hamburger, cheese, and other foods grown in Idaho," says Char Byington, University of Idaho Extension educator in Bannock County.

EFNEP—Idaho's Expanded Food and Nutrition Education Program—afterschool programs serve students from grades 1 to 6 who are eligible for free school lunches. Nutrition fundamentals and healthy, economical dishes are the focus of 1-hour afterschool sessions at least once a month where youth actually help prepare foods they then eat. "Helping students be aware of foods grown nearby and the nutrition they bring is a good tool for us," says Byington. EFNEP is funded by the USDA's National Institute of Food and Agriculture.

Founded by the Treasure Valley Food Coalition and Meadowlark Farm, Nampa, the Year of Idaho Food includes University of Idaho Extension as a partner. It piggybacks on the Idaho State Department of Agriculture's September-long celebrations of Idaho Preferred, a label alerting grocery store customers to foods grown in Idaho. See www.nwfoodnews.com/about-the-year-of-idaho-food/ and <http://idahopreferred.com>.

Contact CHAR BYINGTON at byington@uidaho.edu.



UI Extension scientists help Idaho counties fight noxious weeds

INVASIVE NOXIOUS WEEDS COST IDAHO AN ESTIMATED \$300 million a year in damages to livestock and wildlife and their habitats, agricultural crops, and degradation of recreation areas. University of Idaho weed scientists are developing and teaching methods to better detect and predict the spread of this weed menace.

“You can’t eradicate a weed until you know where it is,” a big issue in Idaho’s vast wild areas, says Tim Prather, Moscow, UI Extension weed specialist for the Department of Plant, Soils, and Entomological Sciences. “If you can determine how weeds will spread, then you can better target eradication efforts.”

Prather believes his team leads the nation in creating on-the-ground adaptive surveys that combine emphasis on human activity and understanding of plant dispersal patterns to predict weed locations. His team has also created a process to show which plant communities are susceptible to invasion by a weed species to further focus survey efforts.

Prather also is lead author of UI Extension’s popular 140-page *Idaho’s Noxious Weeds, 5th Edition* pocket guide and the 72-page *Idaho’s Noxious Weeds 2011 Control Guidelines*. (Find them at www.cals.uidaho.edu/edComm/catalog/.)

How Lemhi County uses weed models

In Salmon, Lemhi County Weed Superintendent Daniel Bertram uses Prather’s models to detect Rush skeletonweed (*Chondrilla juncea*), tricky because of its high germination rate and dandelion-like papas enabling seed to travel miles in wind currents. “Tim has taken our known Rush infestations and run them through our wind patterns. This allows us to focus on areas of high probability for seed dispersal,” says Bertram. He also uses Prather’s model to determine in which areas the seeds are likely to germinate.

He praises Prather’s help, “especially when, due to budget cuts from every avenue, weed control crews are forced to do more with less. The problem with invasive species is they don’t take a break.”

Bertram’s good news is, of 21 noxious weeds infesting 100,000 Lemhi County acres, “We have eradicated Dyers woad, Saltcedar, yellow starthistle, and we currently are trying to eradicate Japanese knotweed, puncturevine, and perennial pepperweed.”

Working with Prather from UI CALS are Larry Lass, Bahman Shafii, Steve Cook, Bill Price, and Sandya Kesoju; from University of Montana are Woodam Chung and Tyron Venn. The team also collaborates with Montana State University to prevent invasive species from crossing the Continental Divide, a program coordinated by MSU’s Kim Goodwin.

Contact TIM PRATHER at tprather@uidaho.edu.



Indicators Northwest website now includes 2010 census figures

Populations for Idaho, Washington, and Montana each grew by 1 percent between 2009 and 2010. Only Oregon’s population remained unchanged, according to the Indicators Northwest website.

Overviews for the four states show Oregon with the highest unemployment rate of the four (9.4%) and Montana with the lowest (7.2%). As for salaries, the average Washington job paid \$13,161 more a year than did the average Idaho job—\$48,868 for Washington compared to \$35,707 in Idaho. Oregon wages averaged \$41,851, and Montana’s trailed at \$34,474.

Maintained by the University of Idaho’s Office of Community Partnerships, the site, popular with anyone who needs the latest state and county census data, now reflects the 2010 U.S. Census at both state and county levels. The latest figures for the region’s American Indian reservations are a mix of 2000 and 2010 census data.

Contact CHRISTY DEARIEN at cdearien@uidaho.edu, or go to www.indicatorsnorthwest.org/.



The Ripple Effect

New volunteer water stewards monitor Idaho streams, collect data, and bring more science to Idaho's youth

by DONNA EMERT

HIGHLY POPULAR AND SUCCESSFUL University of Idaho Extension “citizen science” volunteer training programs—including Master Gardeners, Master Food Preservers, and Master Forest Stewards—welcome a newcomer this year—Master Water Stewards (MWS), also called IDAH₂O.

To achieve master certification, water stewards attend workshops to learn correct procedures for gathering chemical, physical, and biological data from Idaho streams and lakes, including measuring oxygen and phosphorus levels, identifying aquatic insects, and recording the water's temperature, color, odor, width, depth, velocity, and transparency.

Skills learned during 8 hours of hands-on, streamside workshop training are honed by each steward, who commits to monitoring conditions at an adopted stream site at least eight times throughout the year.

They're willing to yank up their waders and slosh right in. Mike Emory, an earth science teacher at Woodland Middle School in Coeur d'Alene, was one of the first to plunge in and take the training.

“Personally, I want to be informed about the quality of water that supplies our aquifer,” said Emory. “The sole source designation of the Spokane-Rathdrum Prairie Aquifer really means there is no other viable drinking water supply for some 500,000 people that live in the greater Spokane-Post Falls-Coeur d'Alene region.”

Teacher stewards share training

The ripple effect of Emory's training includes Woodland's recent application for a grant to create a field experience that will span his students' three years of middle school. Students will visit recharge sites around the aquifer, collecting samples and assessing water quality. They'll use their cumulative data to monitor monthly, seasonal, and annual changes. The knowledge they gain locally also will serve as a context for discussion of regional, national, and global water issues. “Ideally, they will become

stewards as well,” said Emory.

Boise teachers may have similar projects in mind. They signed up to attend a Master Water Stewards workshop at our press time, with science projects for their students being considered—expanding the ripple effect.

By July, Master Water Stewards' impact had already gone global

University of Idaho international students representing eight Latin American nations took MWS training as part of an intensive environmental science curriculum. They are now helping to shape monitoring efforts in their home countries.

Water quality is a defining global issue in the 21st century. Idaho is no exception, says Ashley McFarland, who developed and teaches the university's Master Water Stewards program. “Maintaining a high level of water quality in Idaho is extremely important to residents who rely on it for drinking water and to aquatic species that require the habitat it supports,” said McFarland. “In northern Idaho particularly, the economy is largely supported by tourism, which requires a fresh supply of water for fisheries and recreation. Water quality monitoring helps protect both the biological and economic health of the region.”

As a University of Idaho Extension Educator in Benewah County, McFarland developed the Master Water Stewards program based on an Iowa model, tailoring it to fit Idaho streams.

“Because of the research-based training master volunteers receive, the data these water stewards collect are recognized as valid,” said Mike Howell, UI Extension director in northern Idaho. “In Iowa, the data are used by state agencies and policy makers, and that is one of our goals here.”

Idaho and local groups partner in IDAH₂O

Water stewards training was developed in response to input from more than 100 county commissioners across the state, said McFarland. To tailor the program to Idaho, she collaborated with an advisory group that included Glen

Volunteers turn over rocks in a stream near Coeur d'Alene seeking aquatic insects and other invertebrates. Identifying them helps determine water quality. At bottom, volunteers use a field-monitoring kit to test for dissolved oxygen in the stream, critical for fish and insects they feed on. Photos by Steven Martine.

Rothrock, lake management plan coordinator for Idaho's Department of Environmental Quality; Rebecca Stevens, lake management restoration coordinator with the Coeur d'Alene Tribe; Tyson Clyne, watershed coordinator for the St. Joe and St. Maries rivers in the DEQ Coeur d'Alene Regional Office; and Sid Fredrickson, wastewater superintendent for Coeur d'Alene, among others.

IDAHO is funded by an \$11,570 seed grant from the university. Two \$3,000 grants, one from the Coeur d'Alene Rotary and another from the U.S. Fish and Wildlife Service, purchased water quality test kits needed by participants.

"The program focuses on wadeable streams that feed larger bodies of water," said McFarland. "Analysis of these tributaries allows water stewards to identify the source of pollutants before they arrive in the region's lakes and rivers." Water quality issues, like the rivers themselves, blithely cross regional boundaries. The Spokane River flows

from northern Idaho into neighboring Washington state. On the Washington side, the river must meet some of the most demanding water quality standards in the nation, aimed at reducing phosphorus loads.

Costs of phosphorus loads

While phosphorus exists naturally in the water, additional phosphorus—from human and animal waste, fertilizers, and detergents—can overload the system, causing rampant algae growth. The decomposition of those algae sucks oxygen from the water, choking out fish and other aquatic life. Cleaning it up is a technically challenging and fiscally daunting task, particularly in times of decreasing government funding.

"For the Spokane River, water quality concerns are forecast to cost the six municipalities and the two industrial wastewater dischargers between \$1 billion and \$1.5 billion over the next 20 years," said Sid Fredrickson, Coeur d'Alene wastewater superintendent. "Coeur d'Alene alone anticipates that near-term

wastewater improvements will cost as much as \$50 million."

MWS has numerous volunteers monitoring the Spokane River watershed, working to identify tributaries that may be a source of excessive phosphorus, said McFarland. "The more stewards we can train and get out on the water, the more data we will have to support targeted restoration and best management practices."

Margaret Mead may best summarize the program's ripple effect: "Never doubt that a small group of concerned citizens can change the world. Indeed it's the only thing that ever has."

See www.uidaho.edu/cda/idah2o. DONNA EMERT, Coeur d'Alene, is a writer for UI Communications



Ashley McFarland (leg in water) and Wanda Quinn measure stream width and will also measure depth and velocity to calculate how much water flows through this system. Photo by Steven Martine.



Blue Ribbon Kids

4-H Celebrates 100 Years of Developing Idaho's Youth

stories by MARY ANN REESE and DIANE RONAYNE



1988. Horse judging. Canyon County 1st Team

1919 *I joined the lamb club because on our dry farm—sheep grazing country—there are lots of bum lambs. If someone does not rescue them, they die; I decided to rescue all I could. Papa called me at 4 a.m. to ride 10 or 12 miles to sheep camps. When I got a little lamb, I'd go home and feed it with a spoon until it was strong enough to suck on the bottle. Soon I turned lambs loose on the green pasture. ... Coyotes are bad early in the morning and late at night. Sometimes I would take the gun and go keep the coyotes away. I raised 25 good lambs.*

—ADALINE MOSES, 4-H, LaBelle, Idaho

IN THE DAILY FIGHT FOR THE HEARTS AND MINDS of America's children and teens, some parents and educators may be tempted to throw up their hands and let mass media and pop culture dictate their children's values. But one organization fights not only for hearts and heads, but also for kids' hands and health (the 4 Hs) and futures ... and it wins!

Known worldwide as 4-H, the program has developed confidence, compassion, and connections with caring adults in thousands of young Idahoans for 100 years. It has evolved from an organization primarily concerned with improving ag production and food preservation to one dedicated to giving young people competence in becoming leaders and productive citizens with life skills needed to pursue their dreams.

In 2012—its centennial year—University of Idaho Extension's 4-H Youth Development program offers a market basket of activities in science, citizenship, and healthy living for youth from ages 5 to 18. Everything 4-Hers do is designed to be fun—yes—but mainly to give young people competence in public speaking, leadership, citizenship, planning and implementing goals, working in teams, empowering each other—skills we'll all want them



to have in a few years when they're the ones keeping our towns, cities, and economies going.

Watch for centennial events throughout 2012 including birthday celebrations at county fairs. "Our theme is Idaho 4-H: Something to Celebrate," says Carrie Stark, Moscow, UI Extension 4-H youth development specialist heading up the centennial. "We're challenging all Idaho clubs, counties, and communities to

donate 100 hours of service locally—give 100 cans or pounds of food to the local food bank; plant 100 trees; write 100 soldiers thanking them for their service. Other ideas: Paint murals around town; honor volunteers who have served the longest; do anything to make 4-H even more visible." 4-H also hopes to recruit more youth, add 1,000 more adult volunteers, and raise \$1 million to expand programs. See www.uidaho.edu/4h/.

Idaho 4-H impacts lives in many ways

Austin Fisher, 16, Montpelier, dreams of becoming a U.S. ambassador, thanks to four years of participating in 4-H's annual Know Your Government Conference in Boise's domed capitol.

Orofino's Zender family hosted a Ukrainian student via 4-H's international youth exchange, providing what

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Clara Bowman and her prize-winning guinea pig at the Latah County Fair. Photo by Steven Martine.



1944. Maurice Club members proudly display calves they raised for the fair.



Justin Crossley and his rocketry project.

1916 In 1916, Thelma Later, 13, Madison County, canned more than 500 quarts of fruits and vegetables. Elwin Scheyer, 16, Latah County, made \$76.95 profit from his garden.

—CLIFTON ANDERSON in his *History of the College of Agriculture at the University of Idaho*

Richard Zender still calls “our best year ever because she taught us to look at and appreciate our own country while we learned about hers.”

Andy Smyth, 4th generation Wilder resident and 4-H super-volunteer for decades, taught 110 Idaho youth at 2010 Ambassadors’ Retreat how to control a microphone on stage and introduce strangers with such aplomb that you yearn to hear more.

UI Extension plans and manages Idaho’s 4-H programs

University of Idaho Extension educators in 42 of Idaho’s 44 counties and a small state staff plan and implement Idaho’s 4-H programs. They invite youth to form clubs and provide numerous afterschool programs plus fifth-day educational options at some four-day schools. Thanks to federal grants, 4-H works hard to help at-risk, low-income youth in 10 Idaho towns.

In 2010, Idaho had 33,175 active 4-H members, living about half and half in metro and rural areas. Only about 20 percent of Idaho 4-Hers now live on farms. Hispanics totaled 4,176, up from 1,737 in 2001. UI Extension leaders also recruit and train volunteers—3,897 in 2010.

Origins of 4-H: If adults won’t listen, apparently kids will

In the early 1900s, the federal govern-

ment sent university-educated farm agents out to help rescue crops failing for a variety of reasons that had left many farmers struggling, if not broke.

When farmers didn’t trust university-based advice, ag agents enlisted the help of farm children. In schools, churches, and town halls, ag agents gave carefully selected seed for new crops to rotate with current crops.

As boys and girls grew the crops and exhibited and won prizes for them, their elders began to be convinced.

Sources don’t pinpoint the exact origin of 4-H, but all stories point to youth clubs being early and important partners in Abraham Lincoln’s 1862 visionary experiment of giving land to each state to build a university and teach best agricultural practices to help a youthful nation eat and thrive.

In 1914, Congress’ Smith-Lever Act officially connected extension activities at land-grant universities with the Department of Agriculture.

That year, 6,565 Idaho boys and girls were involved in potato, corn, poultry, pig, breadmaking, sewing, and canning clubs.

Idaho’s oldest 4-H club

Lemhi County gets credit for having Idaho’s oldest 4-H club. In 1912,

Lemhi County school superintendent Elizabeth (Bessie) McDonald Reed organized it. Members’ projects were displayed with local produce, launching Lemhi County’s first fair.

Yet the 4-H name wasn’t widely adopted in the Gem State until the 1920s.

Other Idaho 4-H milestones:

1930—The Great Depression saw closed factories, bankrupted businesses, and foreclosed farms. Some 350 young people gathered on the UI campus for the 8th annual 4-H short course (now Teen Conference). Another was held the following week in Pocatello; five 4-H forest clubs were organized.

1948—4-H’s International Farm Youth Exchange (IFYE) begins. IFYE delegates travel to host countries to live with families for up to 6 months, becoming part of the family and helping with farm work. Back home, they share their adventures: One Idaho youth gave 150 lectures to 4-H clubs, civic groups, and schools.

1957—Success of Russian Sputnik prompts greater focus on science. Shift is away from what to feed cows and more on why specific feeds work. Rocketry projects soar.

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Legacy 4-H family Mary and Kevin Davidson and youngest daughter Rena display their 4-H shirts going back 30 years. Photo by Mark LaMoreaux.



1950s. 4-Hers climb aboard bus headed to a national convention.

VOLUNTEERS

The heart of Idaho 4-H

1924 *Mr. Mink expanded our vision of agriculture. We sheared sheep, skinned hogs, converted young rams to wethers, and learned to operate a cream separator. At a hatchery, the owner showed ostrich eggs in the process of hatching.*

—TWIN FALLS HIGH 4-HER whose leader was C. L. Mink

4-H RELIES ON VOLUNTEERS—the thousands of adults who help plan and deliver 4-H programs throughout Idaho. Guided by UI Extension youth specialists, volunteers run clubs and chaperone trips to state and national events. They're extra ears and shoulders as well as mentors, teachers, and guides. "Without volunteers, 4-H wouldn't work," says Arlinda Nauman, Moscow, director of University of Idaho Extension's 4-H Youth Development. "Our centennial goal is to invite 1,000 additional volunteers into the 4-H experience."

Idaho's 4-H volunteers numbered 3,897 in 2010. Volunteers give as few as an hour or two a week on up to countless hours. stalwarts return year after year, helping other youth even after their own children are grown.

Idaho's 4-H families often stay involved for generations. Volunteers must undergo a background check and attend training on child development best practices. Training is available for hundreds of youth projects on topics ranging from science (engines, mechanics, geocoaching, rocketry) to leadership/citizenship, and healthy living.

Kevin and Mary Davidson: One "legacy family"

Kevin and Mary Davidson, Buhl, are one of Idaho's legacy families—meaning at least three generations of their family have contributed in significant ways to Idaho 4-H. They are superstars—chaperoning youth to state and national events, heading up fundraising for 4-H, and serving as district presidents and club and project leaders.

Each hails from a dairy family at opposite ends of the state—Kevin from Coeur d'Alene, Mary from Driggs. They met and married because of 4-H. Both have parents who volunteered in 4-H clubs. Their three daughters and one son—all youth leaders in 4-H—still volunteer. Why?

"In 4-H, you're teaching life skills to kids," said Mary. "Some youth don't have much of a chance. Kids we teach give 2-minute talks about what 4-H means to them that turn into 5-minute talks because of so many tears."

"If a young person gets in trouble, 4-H mentors listen and help them straighten out and graduate from high school," added Kevin. "At one point 75 percent of the girls in my wife's club came from single-parent families. It may look like we're teaching cooking, but in the process we help girls get through their parents' divorce. We are impacting lives."

Mary Davidson recalls one 4-H girl who couldn't spell. "I worked with her. Soon she won awards. Today she teaches college English."

Their youngest daughter, Rena, a UI freshman studying clothing, textiles, and design, has held pretty much every 4-H office possible and attended national 4-H events. "4-H is helping me with college because all my 4-H responsibilities and travel give me both experience and an impressive resume," says Rena. "4-H makes you well rounded and gives you great social skills. You even learn to love people you used to dislike, because you get to know them." ■

1960s—Peace Corps hearings. Grant Shrum, director of the National 4-H Foundation, testifies before Congress in favor of the Peace Corps and relates the experience of 14 years of IFYE.

Does 4-H still make an impact?

Possibly no youth organization has been as scrutinized for what works and impacts as much as 4-H. Search “4-H” at the peer reviewed online *Journal of Extension* (www.joe.org), and you, too, may give up after counting at least 2,200 research papers within the last decade.

One documents Idaho’s 2003 statewide 4-H survey, which found 4-H participants—compared to other youth—get more As, are more involved as leaders in schools and communities, help others more, and are less likely than others to drink alcohol, shoplift, use illegal drugs, damage property for fun, or smoke.

Idaho’s 4-H survey results parallel a longitudinal study of positive youth development by Tufts University (Google “Tufts 4-H youth study”), now in its fifth year. It tracks some 4,000 youth and compares an equal number of 4-Hers with members of other youth clubs and youth not in clubs.

4-H makes tangible impacts. One of Idaho’s most famous 4-H alums—Governor C. L. “Butch” Otter—credits his 4-H years with “helping to mold the person I have become.” He told us: “4-H is as important today as it was 100 years ago. In fact, maybe it’s even more important today.”

To join, volunteer, or donate to 4-H, see your UI Extension county office or www.uidaho.edu/4h/. ■

1916 *Nellie Chase, a 16-year-old Clearwater County club member, won the state championship for best potatoes in 1916. She won four first premiums on potatoes in open competition, winning both at the State Fair and the Spokane Interstate Fair.*

1918 *Lloyd Gilson and Walter Remer, club boys of Nez Perce County, were poor students in school until they became interested in 4-H club work. They are now honor students and have secured three acres to continue their club work next year.*



photo by MELISSA HARTLEY, UICreative Services

FRIENDS OF 4-H

Brother, sister team up to donate \$200,000 to found Youngstrom 4-H faculty endowment

During his years as associate director of extension at the University of Idaho, Carol O. Youngstrom “was a consistent supporter of 4-H programs,” say his son, Robert C. Youngstrom ’57, ’61, Boise, and daughter Mary Youngstrom Stunz ’61, who lives in California’s Sacramento area.

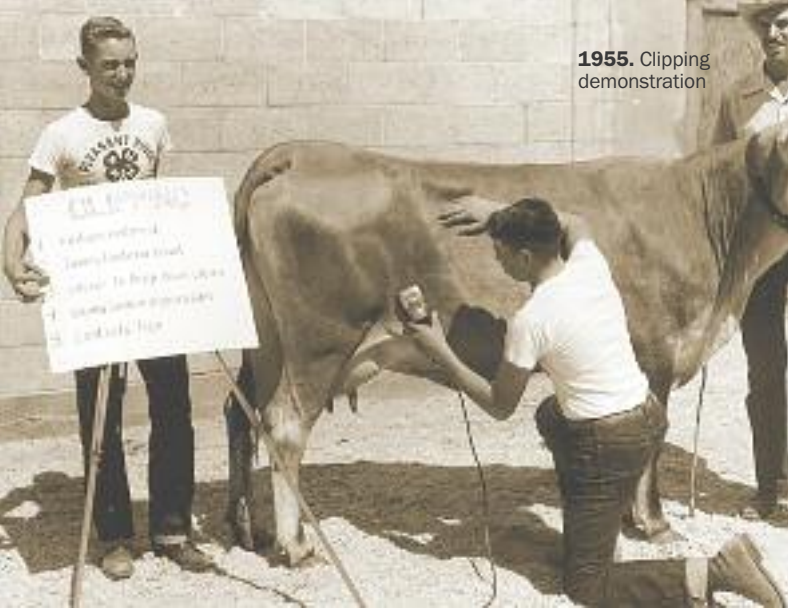
The siblings, interviewed on campus in September, have each given \$100,000 to establish the Youngstrom 4-H Faculty Excellence Endowment honoring their parents, the late Carol O. and Elizabeth E. Youngstrom.

Their gifts help launch 4-H’s efforts to raise \$1 million for the 4-H Foundation, which would bring the total of the Friends of 4-H Endowment to more than \$3 million. Interest earned from the endowment provides college scholarships for 4-H youth, helps low-income 4-Hers attend state and national events, and awards county 4-H leaders with numerous opportunities to initiate and sustain youth programming.

Carol O. Youngstrom, who was raised in Culver, Oregon, began 40 years of service to the university in 1929 as an assistant agricultural economist. In 1939, the family moved to Boise where, in 1944, he became associate director of the extension service, a position he held until his retirement in 1969. “Both mother and dad believed in the value of 4-H and were early contributors to 4-H’s endowment,” said Robert.

“Both were inducted into the 4-H Hall of Fame in 2002,” added Mary. “Mother served as honorary co-chair of the Idaho 4-H Endowment Campaign in 2002 to ’03. We’re pleased to be able to honor our parents in this way. Dad was such an Idaho advocate. He knew everybody in agriculture. He was so good in extension because he paid attention to legislators and to all people.”

Robert, a lawyer, spent much of his life as an Idaho Industrial Commission hearing officer where he heard workers compensation claims and unemployment insurance appeals. Mary, a graduate of the College of Education, married Harry Stunz ’61, a dentist. They raised two sons in California, and now she is enjoying her grandchildren there, one of whom is showing an interest in attending the UI. ■



1955. Clipping demonstration



1957. Cakes at West Idaho Fairs



1960s. Entomology project.



2011. Proud poultry competitors await judge's comments.

photo by BARRY KOUCH, Lewiston Morning Tribune

IT'S FAIR TIME!

Where rubber meets the road for 4-H projects

1930 *Almost every 4-H member in Hatter Creek had a calf. They were all lined up to come to the county fair, but didn't show, afraid their calves weren't as good as some others. In the end, we got trucks and brought the calves and youth owners to the fair.*

—LATAH COUNTY, circa 1930

TO EXPERIENCE CLASSIC 4-H—the nerves, the excitement, the sweetness, the tears—go to your county fairgrounds the hour judging ends, doors open, and children race to see if their project won a ribbon. Or come watch the day 4-H youth “fit and show” to judges their steers, goats, sheep, and swine.

For months and often a year, 4-Hers spend countless hours setting goals, feeding, grooming, clipping, measuring, sewing, giving talks about their projects, writing data in log books, dreaming, hoping.

“County, district, and state fairs across Idaho and North America are the stage for 4-H members to showcase their work,” says Arlinda Nauman, director of UI Extension 4-H Youth Development. “Many work all year for this moment.”

Nearly all county fairs held each year in North America feature a 4-H component. Besides animal projects, 4-Hers compete in numerous categories such as business, citizenship, clothing, engineering, economics, fitness, leadership, marketing, science, and technology.

“Seeing a little kid in the arena controlling a 1,200-pound steer before judges still gets me,” says Scott Nash, UI Extension educator in Bingham County. Nash grew up in Idaho 4-H, met his wife in 4-H, and raised his children as 4-Hers. Today he teaches 4-H youth not only how to show animals at the fair, but also analytical and communication skills—how to judge animals and explain to judges what makes one animal superior to another.

Nash insists that every youth who enters a project at the fair “is a winner” because he/she set and met a goal. But that blue, red, or white ribbon still brings an extra grin. While the sale of many 4-H animals may bring tears to the eyes of some owners, funds from animal sales can go towards college or other needs.

4-Hers make lifelong friends at fairs. Rick Waitley, Boise, executive director of the Food Producers of Idaho, says many of his best friends still date back to his Idaho 4-H days. He sees both fairs and 4-H as community builders. In an era when U.S. Department of Education data indicate that more than 80 percent of 7th through 12th graders get no formal agricultural education, Waitley adds, “fairs and 4-H serve a vital role in educating the population about where their food comes from.” ■



THE FUTURE OF 4-H

Second century of 4-H: Focus on science, healthy living, and citizenship

NATIONAL 4-H SUGGESTS DIRECTIONS for state programs and keeps its forward focus simple—science, healthy living, and citizenship/leadership—cornerstones of 4-H. Embedded in these, too, is volunteering, giving back to their communities.

Already Idaho clubs are giving back. The Wild West Waddies 4-H Club in Emmett hosts a “Love at First Walk” dog walk each February that has raised \$18,000 for a non-profit animal shelter in the past seven years. Gem/Boise County 4-H clubs are hubs of a UI-BLM wild horse project, responsible for 58 wild horse weanlings being trained by 20 4-H clubs across the state.

“Clubs all over Gem and Boise counties are doing amazing things—trash pick up, repainting old signs in Horseshoe Bend, working the free dinners for those in need, helping with holiday food baskets, adopting elderly people in our nursing homes, the list goes on and on,” says Melissa McDaniel, 4-H program coordinator for both counties.

Needed: Engineers/computer savvy volunteers

National 4-H has always been about science. Today, as the United States faces shortages in people with engineering and math skills, 4-H bumps those skills to top priority. “4-H has dozens of great science curricula,” says Tim Ewers, who co-leads Idaho 4-H science programs with Carrie Stark. Both are Moscow-based UI Extension 4-H youth specialists.

“What we need are more volunteers with the skills to guide them,” says Ewers, who pours 90 percent of his energy into robotics as a way to make math and science both engaging and, hopefully, “as fun as sports.” Programs starting at age 6 build on each other, encouraging ever more challenging robotics competitions on up through college. Regional and state contests for robot-building teams reward innovative science and collaboration.

Ewers needs computer savvy volunteers to help youth build robots and sponsors to fund robotic kits for schools. See www.uidaho.edu/extension/4h/robotics.

Overseeing animal science 4-H projects, Carrie Stark says youth engaged in today’s animal projects “need to know about diseases, genetics, and reproduction, as well as how to raise quality animals. We’re bringing science principles back into all 4-H animal science projects.”

Gardens: One key to healthy living

As obesity and childhood diseases like diabetes increase, 4-H tries harder than ever to educate Idaho’s youth through, among others, afterschool nutrition programs for low-income children, who practice making their own healthy

snacks. 4-H encourages sports like tag, dodge ball, jump rope, and walking with pedometers—often as competitions where, for example, Boundary County youth, working with Erika Thiel, see if together they can walk enough miles to connect Bonners Ferry with Mexico in a year.

Gardening is popular. Low-income Hispanic youth are growing their first garden at Caldwell’s Farmway Village. “Our 4-Hers planted it, made rosters to make sure it gets watered and weeded, and are now taking produce home to their families,” says Liliana Vega, UI Extension Ada County associate youth educator.

Coeur d’Alene Reservation youth in Laura Laumatia’s 4-H club in Plummer are also learning through gardening.

Leadership and learning by doing government

Leadership skills are encouraged at every 4-H level, as youth step up to hold offices in local, regional, then state and national activities, each with greater challenges.

Idaho 4-H’s capstone leadership event is Know Your Government (KYG), staged each President’s Day weekend in the Idaho Statehouse and Supreme Court building. What 8th or 9th grader wouldn’t be impressed to debate bills and decide legal cases while seated under Boise’s historic dome, with real judges and legislators at their elbow? Among the 77 adults working with 174 youth delegates from all Idaho counties in 2011 were more than a dozen Idaho state senators, representatives, and judges who spent their vacation mentoring teens for their roles.

4-H KYG delegates tackle tough issues: Mandatory driving tests for senior citizens, age of consent for abortions, illegal immigrants in Idaho. For each bill, a dozen students role-play legislators and lobbyists. Arguments made by teens are often impressive and persuasive.

In the judicial track, students take part in mock trials. Valley County Magistrate Judge Henry Boomer briefed the young judges, as did Idaho Supreme Court Chief Justice Daniel Eismann and Federal Court Clerk Libby Smith.

“KYG adds another dimension to 4-H training. Here teens learn about state government and the role that citizens have in making it work for all,” says Rep. Darrell Bolz, Caldwell, a UI alum and six-term Idaho lawmaker. Rep. Wendy Jaquet uses KYG to “keep an eye out for good pages.” KYG keynote speaker Lt. Gov. Brad Little strongly encouraged youth to stay aware of and continue participating in government, perhaps jesting, “If you’re not at the table, you’re probably on the menu.”

See 4-H website at www.uidaho.edu/4h/. ■



Junior Master Gardener proudly shows off flowers she grew. Photo by Brad Beckman.



Debate continues in capitol's hallway at 2011 Know Your Government. Photo by Pam Benham



Idaho military family enjoys time together at 4-H's Operation: Military Kids camp.

2011 Clubs all over Gem and Boise counties are doing amazing things—trash pick up, repainting old signs in Horseshoe Bend, working the free dinners for those in need, helping with holiday food baskets, adopting elderly people in our nursing homes, the list goes on and on.

—MELISSA MCDANIEL, 4-H Program Coordinator for Gem and Boise counties



Robot's creator helps machine move white cylinders into place at Idaho statewide competition. Photo by Mark LaMoreaux.



UI Extension's Valdesue Steele coaches Nez Perce 4-Her preparing to ride Appaloosa. Photo by Mark LaMoreaux

“That’s what the college and higher education are supposed to do, take a look at issues critically and hold them up to the light. The more study, the more critical analysis we have, the better we understand it and the better we can adapt or whatever we need to do.”

—BILL FLORY,
Culdesac, Flory Farms owner

Regional Approaches to Climate

REA

Success in solving PNW soil erosion problems led to new \$20 million grant

➤ LATE SUMMER AND EARLY FALL brought a bountiful harvest to many wheat and barley growers across the interior Columbia River basin. The result of cold, wet weather during an abnormally long spring, the growing season stood out as unusual in many ways.

It also might offer a glimpse of climate change grain growers may face if scientists’ predictions hold true. For growers, the ample harvest was payback for a challenging season. A wet spring delayed planting, then created conditions favoring rust outbreaks and other threats to yields.

University of Idaho College of Agricultural and Life Sciences (CALS) entomologist Sanford Eigenbrode leads the \$20 million, five-year USDA-funded project Regional Approaches to Climate Change in Pacific Northwest Agriculture (REACCH). It focuses dozens of the region’s ag scientists on climate change and its likely effects on wheat and barley. Eigenbrode, a 16-year member of the CALS faculty, led the effort to land the project, one of three announced by USDA’s National Institute of Food and Agriculture in February. His project involves farmers from across the region. Scientific data will be collected on stakeholders’ and university farms.

➤ **Earlier effort reduced soil erosion by 75 percent**
Today’s outreach to farmers builds on a 35-year run of a similar project addressing the loss of up to 12 inches of

topsoil over 60 years due to water erosion in 10 million acres of Pacific Northwest croplands. With the Solutions To Environmental and Economic Problems (STEEP) grants, scientists from the three Northwest land-grant universities focused on soil erosion threatening crops and water quality.

By the project’s end, erosion dropped 75 percent and a new farming technology, direct seeding, took root. Donn Thill, Idaho Agricultural Experiment Station director who served as Idaho’s chair on the project, said rising opposition to Congressional earmarks, the older project’s funding source, helped spur today’s push toward competitive grants.

CALS Dean John Hammel represents a sort of alpha and omega for STEEP and an archetype for regional cooperation. A graduate of Oregon State University, he went on to graduate school at Washington State University, earning his doctorate in 1979 under Robert Papendick, who founded STEEP with Idaho economist Ed Michalson. Hammel joined the Idaho faculty in 1982 as a soil physicist, working on a STEEP-funded project. In 2011, he presided over the February celebration of Eigenbrode’s REACCH Pacific Northwest Agriculture grant, the largest in University of Idaho history.

➤ UI’s expertise to lead regional science studies

The project shows the University of Idaho has the capacity and expertise to lead a large-scale regional science project, said Jack McIver, vice president for research and economic development at Moscow. Other partners in the project include the USDA Agricultural Research Service, Oregon



Change in Pacific Northwest Agriculture

story by BILL LOFTUS photo by DAVID BOSTOCK

State University, and Washington State University.

Spring weather is not climate, of course. The temptation to link the two may be strong, but much larger, longer-lived forces are at work.

“There is a tension between what scientists can say with confidence, which is that we can attribute the increase in global average temperatures to greenhouse gasses, to the human preference to operate on our own experience, which is local and short term,” said Phil Mote, an Oregon State University climatologist and project participant. Mote is joined by University of Idaho geographers and climatologists Von Walden and John Abatzoglou among the 22 scientists with key roles on the REACCH project.

Engaging PNW K-12 students and area growers
Other key grant objectives will focus on K-12 education and economic studies of growers’ options.

CALS soil ecologist Jodi Johnson-Maynard and agricultural educator Kattlyn Wolf got an early jump on the project with a survey that drew responses from 1,000 teachers. Their goal is to offer lesson plans by next year that will bring agriculture into the region’s classrooms.

CALS and UI Extension agricultural economist Kate Painter will adapt her work with direct-seed farming to help growers better evaluate how the technology that involves minimal soil disturbance can fit into their operations.

Bill Flory of Culdesac operates a diversified farming operation with a heavy emphasis on wheat. Besides that, he serves on the Idaho Wheat Commission and served as

president of the Idaho Grain Producers and the National Association of Wheat Growers. Flory was among the earliest stakeholders to participate in the new project. He is skeptical that humans bear responsibility for climate change. A University of Idaho alumnus in business and finance, Flory, a savvy businessman, intends to participate in the new project because he wants to stay informed about the challenges and options Flory Farms may face.

“That’s what the college and higher education are supposed to do, take a look at issues critically and hold them up to the light,” Flory said. “The more study, the more critical analysis we have, the better we understand it and the better we can adapt or whatever we need to do.” This winter, he’ll look at Flory Farms’ carbon balance. An advocate of direct seeding, he is already sensitive to the amount of chemical fertilizers and fuel his farm uses. With about 13,000 acres of crop and timber ground, Flory is proud his operation is absorbing a lot of CO₂.

With nearly two years of collecting the best science and the best scientific team to study the issue, Eigenbrode’s project is on track. “We’re moving ahead. It is a large, complex project that requires planning and coordination, but we’ve started installing our equipment and choosing research sites. We are confident that this is going to help growers better understand climate change and their roles in addressing it,” Eigenbrode said.

Contact BILL LOFTUS at bloftus@uidaho.edu; SANFORD EIGENBRODE at sanforde@uidaho.edu.

MORE FUN THAN YOU CAN SHAKE A STICK AT

AMAZING INNOVATION



INNOVATORS!!

story by BILL LOFTUS
illustration by NOAH KROESE



Their discoveries and contributions to Idaho's economy

INNOVATIONS BY UNIVERSITY OF IDAHO CALS RESEARCHERS produce results that support Idaho's economy directly by sustaining the state's No. 1 industry, agriculture.

Scientists throughout the College of Agricultural and Life Sciences are among those honored as innovators by the University of Idaho Office of Research and Economic Development. In some cases, those researchers have retired or moved on to other jobs, but their discoveries continue to pay dividends both to the university and the state.

New crop varieties keep Idaho ag competitive

Brassicas. Thousands of acres of canola, rape-seed, and mustard varieties developed by plant breeder Jack Brown provide colorful islands in northern Idaho's oceans of bright green wheat each spring. Alternative Agricultural Products, with offices in the U.S. and Europe, is working to find domestic and international markets for Brown's varieties such as IdaGold, Pacific Gold, and Kodiak mustards. (See www.alternative-agriproducts.com.)

Wheat. In 2011, plant breeder Bob Zemetra's Brundage soft white winter wheat accounted for nearly 10 percent—or 141,000 acres—of Idaho's statewide total of 1.5 million acres planted to wheat, which generated an estimated \$540 million in sales in 2010.

Zemetra worked to develop what may be the next wave of wheat technology—herbicide-resistant varieties using Clearfield technology.

Potatoes are both Idaho's top crop and its most famous, generating an estimated \$690 million in cash sales in 2010. Again, CALS researchers help potato growers maintain their reputations through

continued on page 22

continued from page 21

Jeff Stark's efforts to bring new varieties to market including Alturas, Classic Russet, Clearwater Russet, and Alpine Russet.

The new varieties are good for potato growers, consumers, and the environment by reducing the cost of production and the amount of water and pesticides to produce yields superior to that golden standard, the century-old Russet Burbank potato.

The college's efforts to help develop and refine growing and storage protocols for potatoes define sustainability in an industry agricultural economists estimate is linked to one in 20 Idaho jobs.

Innovations to change the world

Other innovations promise to change the world and how people do things.

Solidify soil. Consider a process developed by CALS microbiologist Ron Crawford and engineer Barbara Williams that uses native bacteria to solidify soil to strengthen buildings in earthquake zones. The bacteria create calcium carbonate, the stuff of limestone, marble, and southern Idaho's hardpan soil, caliche.

Treat water. Or weigh the water treatment technology that a team including environmental chemist Greg Möller, a professor in the School of Food Science, developed that can remove arsenic and phosphorus from drinking or waste water. Bluewater Technologies, Hayden, Idaho, is building a business attracting worldwide attention with the University of Idaho process. (See www.blueh2o.net.)

Three researchers create jobs for Idaho and beyond

Animal scientist Garth Sasser, horticulturist Steve Love, and food scientist Kerry Huber are three innovators whose works within the college's laboratories and research centers created jobs, products, and technical advances that will ripple through Idaho's economy and beyond. These are their stories:

**A LOTTA
BANG
FOR THE
BUCK!**

photo by Steven Martine



GARTH SASSER

BUILDS AN ANIMAL PREGNANCY ENTERPRISE

GARTH SASSER RETIRED FROM THE UNIVERSITY OF IDAHO as a professor of animal science in 1999 after a 32-year career in the Department of Animal and Veterinary Science. In 1992, Garth and Nancy Sasser founded BioTracking based on a discovery he'd made that was patented by the university.

His discovery allows livestock owners to arrange a simple blood-based pregnancy test for their animals. If negative, the producer can arrange for a subsequent breeding, cutting the amount of time an animal would be unproductive if only conventional pregnancy detection methods were available.

Upon retiring, Sasser shifted gears and devoted full time to BioTracking, his Moscow-based company that offers pregnancy testing kits that can be sent to laboratories in seven countries beyond the United States and dozens nationwide. The company offers tests for dairy and beef cattle, goats, sheep, bison, horses, and wildlife species.

This year, Sasser and his 10-Vandal staff at BioTracking's Moscow office (including his wife, Nancy, son Alex, and CALS stalwarts former dean Larry Branen and Doug Pals) celebrated the licensing of a related University of Idaho technology.

Developed by Troy Ott, an animal scientist who occupied the Agricultural Science Building lab next to Sasser's on campus, the new technology harnesses an immune system protein to detect pregnancies in as few as 17 days. Ott left Idaho nearly a decade ago to join the faculty at Penn State, his *alma mater*, but his discovery remains a University of Idaho asset.

Coupled with his own discovery, Sasser said Ott's technology provides pregnancy detection early enough that an open (not pregnant) animal can be rebred within the same heat cycle, cutting costs and increasing a farm's efficiency. Ott's patent also promises a way to quickly discover whether an animal's immune system is challenged by disease.

Contact www.biotracking.com.

STEVE LOVE

HELPS BRING NATIVE PLANTS HOME

FLOWERS AND PLANTS ARE POWERFUL SYMBOLS and links to nature, and landscape plants forge ties among homes, businesses, and the environment.

CALS and UI Extension horticulturist Steve Love looked high and low across Idaho for plants adapted to the state's conditions that offered beauty enough to convince the nursery trade that consumers would buy into his dream.

This summer, the university signed a license agreement with Conservation Seeding and Restoration of Twin Falls and Kimberly to begin bringing Love's discoveries to market under the business name of Native Roots. The first transfer of 40 species in late spring proved promising enough that by summer's end Steven Paulson, a restoration ecologist and the company's CEO, estimated the list had ballooned to 350 species.

With hundreds of plants growing in the company's greenhouses, Paulson said he hopes to offer sample packs of plants he calls nativars to nurseries and landscaping pros by next spring to seed the market he plans to supply with wholesale plants beginning in 2013.

Contact STEVE LOVE at slove@uidaho.edu.



photo by Steven Martine

KERRY HUBER

FINDS NEW ROLE FOR SPUDS

CALS FOOD SCIENTIST KERRY HUBER'S research on all things starch drew him to potatoes like a bee to nectar. Huber's innovative work with potatoes has yielded a discovery that may make fans of some tasty foods rejoice: a starch that resists quick conversion to blood sugar.

For lovers of potato chips and French fries, Huber's discovery promises potato ingredients with high amounts of resistant starch that can help lower a person's glycemic index response, improve insulin levels, and lower fat and cholesterol levels.

The glycemic index reflects how quickly the carbohydrates, like starch, contribute to sugar levels in a person's blood. Resistant starch also aids digestive health.

The patent-pending discovery already has food companies, including Idaho's most famous, lining up to expand Huber's laboratory-scale tests to pilot scale, larger and more exhaustive testing that serves as the doorway to supermarket trials.

Contact KERRY HUBER at huberk@uidaho.edu. Also see www.uidaho.edu/research.



photo by Pam Benham

"Juliet was a moving force in getting farmers to do something. She was key in alerting us to the movement of the disease. We were able to get some fungicide on our crop when it needed it."

- DWIGHT LITTLE, Newdale farmer and member of the Idaho Barley Commission

story by DAVE WILKINS photo by PAM BENHAM

Saved through Science

How Juliet Marshall helped rescue Southeastern Idaho's wheat crop

WHEAT AND BARLEY GROWERS IN ARID SOUTHERN IDAHO are fortunate that they seldom have to worry about stripe rust. They can also be thankful that they have someone like Juliet Marshall to warn them when conditions are perfect for the fungal disease to explode—as they were in 2011.

Growers who responded are glad they did.

Marshall, a University of Idaho Extension cereal pathologist based in Idaho Falls, became concerned last fall when she noticed stripe rust in the winter wheat variety trials at the University of Idaho's Aberdeen Research and Extension Center 65 miles to the southwest.

"I had never seen that before," she said. It's a worry for Magic Valley and eastern Idaho growers whose farm gate value for wheat and barley topped \$590 million in 2010.

WORLDWIDE PERIL OF RUST DISEASES

Rust diseases are among the most widespread and economically damaging in cereal crops worldwide. Characterized by the yellow-orange lesions that form stripes on infected leaf blades, stripe rust rarely survives southeastern Idaho's frigid winters, but Marshall knew it was a possibility. Because of the fall infection, she started warning growers of the threat during UI-sponsored cereal schools in February 2011. Marshall collected leaf samples from her plots as soon as the snow melted in spring 2011 and put them under the microscope.

The presence of viable spores told the story: Stripe rust had survived winter. "That raised a huge red flag," Marshall said. "I put out a stripe rust alert at that point." Marshall routinely issues regular updates to keep several hundred growers and crop advisers informed. She strongly urged producers to take action or risk significant yield losses. UI Extension educators Reed Findlay, Joel Packham, and Lance Ellis also helped identify infected fields and distributed information on control.

The outbreak was so severe this year that yield reductions of 10 to 20 percent were reported even among growers who sprayed twice.

At Aberdeen, Marshall documented yield reductions of nearly 80 percent in some winter wheat varieties that were left untreated compared with those in replicated plots that were sprayed twice. The cereals crew, Tod Shelman, Chad Jackson, and Linda Beck, modified the variety trials at Aberdeen to become a stripe-rust-disease trial. Brundage, a soft white wheat, and Moreland, a hard red variety, were among the hardest hit. "I think our average yield loss over all varieties was 40 percent this year, and that's very unusual," she told a visiting Ethiopian trade team in August.

"Juliet was a moving force in getting farmers to do something," said Dwight Little, a farmer from Newdale and a member of the Idaho Barley Commission. "She was key in alerting us to the movement of the disease. We were able to get some fungicide on our crop when it needed it."



photo by DAVE WILKINS

In the Declo area, growers who heeded the alert and applied protective fungicides harvested about 110 to 120 bushels per acre on their irrigated winter wheat fields. "Those who didn't listen are cutting 60 to 80 bushels," local grower Mark Darrington said during his August harvest.

The economic impact of that 40- to 50-bushel difference looms large in a year with strong wheat prices. "I would say that that pays for Juliet pretty quickly," Darrington said.

SHE DOESN'T ISSUE CROP PEST ALERTS ON A WHIM

Marshall knows that at nearly \$20 per acre (chemical costs, plus crop duster service), the cost of commercial aerial applications can add up quickly.

"I'm not a believer in putting on fungicides if you don't need them," she said. Marshall, promoted to associate professor rank in 2010 after making tenure, became fascinated with plant pathology in undergraduate school. She revels in uncovering the genetic and environmental complexities of plant diseases. "To me it's a hidden world," she said.

WHY STRIPE RUST NOW?

Stripe rust has plagued wheat growers in northern Idaho for years, with its wetter weather, until scientists developed rust-resistant wheat varieties. In dryer southeastern Idaho, a combination of factors made this one of the worst years for stripe rust in recent memory. The rare overwintering of the pathogen and an unusually cold, wet spring played huge

roles. "The key to this whole epidemic was that it was the coldest April, May, and first two weeks of June on record for which we had ever analyzed. It was perfect for stripe rust to go crazy," she said. Support scientist Chad Jackson helped compile the weather data.

This isn't the first time Marshall has warned growers of a potentially serious stripe rust outbreak. She provided a similar service in 2005. That was the first significant stripe rust outbreak in southern Idaho in many years and Marshall's first summer on the job.

"That really launched her as a highly credible authority," said James "Ding" Johnson, Moscow, head of the CALS Department of Plant, Soil, and Entomological Sciences. Plant pathology is just one of Marshall's responsibilities. She is also the regional cereal agronomist and participates in applied research through variety trials sponsored by the Idaho wheat and barley commissions.

"Juliet is essentially doing the jobs of two people," Johnson said. Such multi-tasking has become necessary because of budget cuts. "Marshall's exemplary work on stripe rust this year is a vivid example of the value that University of Idaho Extension provides to Idaho agriculture," Johnson said.

By press time, Marshall had sent growers an e-mail warning that "this year is setting up to be a lot like last year," followed by suggestions to prevent infection this fall. If stripe rust does overwinter again, Marshall will be watching.

Contact JULIET MARSHALL at Juliet.Marshall@uidaho.edu. DAVE WILKINS is a freelance writer based in Twin Falls.

CALS student interns travel the world at Boise's refugee gardens

story and photos by BILL LOFTUS

Somalia Kenya • Congo

UNIVERSITY OF IDAHO CALS STUDENTS with an interest in international studies found a way to explore the world's people one garden at a time this summer in Boise. It's through an internship program that CALS Associate Dean John Foltz launched with help from the dean of students, University of Idaho Boise, and the Idaho Office for Refugees.

For Rachael Ashley (in photos), a 19-year-old sophomore from Nampa studying animal science and agribusiness, working with refugees from Somalia, Kenya, Congo, and other nations allowed her to begin to understand the world better through others' experiences. Later, she'll continue her cultural interests in China.

Three UI students spent much of their summer working as interns with the Idaho Office for Refugees. Also from CALS was Allison Fuller, a sophomore from Boise studying clothing, textiles, and design plus English. The third was Hannah Davis, an international studies major.

One August afternoon, Ashley joined Ali, a refugee from Kenya, in his garden planted on land owned by the Silver Sage Girl Scout Council. He's proud of his rows of string beans, squash, lettuce, and tall African corn—lush even amid the Treasure Valley's shimmering heat.

Elysia Ewing, Idaho Office for Refugees program assistant, serves as a liaison between the refugee farmers and their customers—on this day at the Boise Co-op. The order is for 10 pounds of string beans and small zucchini or summer squash. Ewing helped Ali pick and prepare the produce for its trip to market.

Gardens help refugees in their new land

Idaho entered the refugee resettlement arena in 1975. Refugees come to Idaho from all over the world. They are victims of conflict, persecution, or civil war and have been forced to flee from their home countries.

To help refugees get a foothold in their new home, the



Idaho Office for Refugees sponsors, among other programs, agricultural projects at eight locations in Boise, Eagle, and Star and provides garden space for about 100 refugee families who grow their own food while training in horticultural production and marketing.

Gardens are on donated land and use organic methods. Refugees sell their produce at Boise's downtown Capital City Public Market and smaller markets. They also sell to the Boise Co-op and to a number of restaurants including Bittercreek Alehouse, The Red Feather, Willy B's, Guido's Pizza, and Bardenay.

Saturdays at the downtown market, refugee farmers come loaded with produce under the Global Gardens tent. African women wear beautiful dresses, creating a swirl of vibrant colors as a

backdrop to their wide selection of fresh produce. Interns both help and learn from these gardening families.

Ashley samples new cultures, organic agriculture

"Working with refugees was an experience I'd never had before, and I was a little nervous at the start about saying the right thing or doing the right thing," Rachael Ashley said. "What I learned was, they're people. And they work so hard for the opportunities for a new life free from persecution.

"I admire their work ethic," added Ashley, who especially liked working with refugees' children, "because the kids are curious and rambunctious and some of the hardest workers that I know. And they have a great sense of humor. I really enjoy opening my eyes to new cultures and re-appreciating things that I've taken for granted in life."

In addition, the chance to experience small-scale, organic farming helped her better understand agriculture. "The hands-on experience of going out in the field makes you see something you didn't see in a textbook or realize reality can vary from something you read online. Being

able to analyze what you see and adapting to the situation is something I couldn't have learned in the classroom," Ashley added.

"Sometimes I wish I had my own farming plot because this is a pretty sweet deal, to have a garden plot and be able to make the living they can off gardening," she said. "I've always been interested and excited about agriculture. Through Global Gardens I've been able to see how I can fit into the role of teaching people agricultural education and how to produce for themselves while becoming a better leader myself."

The Boise refugee internship stoked Ashley's interest in international studies. She will tour China for 12 days in January as part of an international leadership seminar for state officers sponsored through the national FFA. As a junior she plans to spend a semester in New Zealand studying their sheep industry.

Allison Fuller's report:
International interests also inspired

Allison Fuller to apply for the refugee garden internship. "I've always liked working with people from other cultures," says Fuller, a University of Idaho family and consumer sciences sophomore.

"It was my first exposure to farming. It was busy, but it was a lot of fun. I really liked working with the families and getting to know them. My favorite part was talking with the kids and with the women." She also enjoyed working at farmer's market. "It made me value local produce and it made me appreciate how much work really goes into it," Fuller said.

"I was learning something new every day. It was learning, but it was fun learning." Before the internship, she didn't know much about refugees or how they got here. A cultural awareness training taught her the process that 700 to 900 refugees a year go through to get to Idaho.

For Hannah Davis, her Global Gardens internship taught her "a lot, and I realized there is a lot more to

learn about the world. It brought a new passion to my life." Davis is a University of Idaho sophomore from Boise majoring in international studies, political science, and history. It got her thinking more about joining the Peace Corps after graduation and serving in Africa, perhaps helping people there set up sustainable agricultural programs.

The internships are part of a broader CALS effort to help students better understand refugees and global issues through transformative experiences keyed to a highly successful agricultural outreach program, said CALS' Foltz.

"These students did a great job and learned things that will help them in their careers and in life," Foltz said. "The internship brought together a lot of different offices and programs in a way that we hope can continue."

Contact John Foltz at jfoltz@uidaho.edu; also see www.idahorefugees.org/home/Global_Gardens.



2011 in pictures

CALS STUDENTS DON'T BELIEVE IN ALL WORK AND NO PLAY. SOMETIMES OUR BEST LEARNING COMES WITH MORE THAN AN OUNCE OF FUN.



1

1 Modeling a dress designed by student Maria Cabalo is her colleague Susan Jacobsen at Mom's Weekend event. Photo by UI Photography Club

2 Idaho cheeses star at Mom's Weekend and raise funds for CALS Ambassadors and the Dairy Club.

3 Taste an insect, if you dare, during CALS Olympics. After all, many people in the world survive, at least in part, thanks to edible insects.

4 Spud Vandal and Bull Vandal encouraged photographs near the Ag Pavilion at Boise and Twin Falls fairs.

5 Candy apples caught on at Ag Days October 7 to 9 on campus. Ag Days food fair raises funds for CALS student clubs.

6 Idaho-grown wines also shined at Mom's Weekend fundraiser.

7 How many high school students attending Ag Days can fit on the Vandal Combine? In all nearly 300 of them came from four states.

8 Flashlights at CALS' Clearwater Corn Maze in Lewiston leave eerie trail.

9 Vandal Combine, built by former CALS students, made its guest appearance at Ag Days.

10 Joe Vandal stands tall amid 10-foot corn stalks at student-designed-and-run corn maze.

11 Hair clip goes just so on Alyson Buell who models dress by Maria Cabalo; Buell's design is modeled by Koryn Dumond. Photo by UI Photography Club.



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11

UNIVERSITY OF IDAHO
COLLEGE OF AGRICULTURAL & LIFE SCIENCES

2011 Alumni Awards

Please join us in congratulating the 2011 CALS Alumni and Friends Award recipients for their outstanding service to the college, Idaho, and their professions. Awards are sponsored by the UI CALS Alumni and Friends Association board of directors. Find information and nomination forms for the annual awards at www.uidaho.edu/cals/friendسالumni.

DISTINGUISHED ASSOCIATE

ALAN HEIKKILA '86, '95, Meridian, earned his bachelor's in agricultural mechanics in 1986 and his master's degree in agricultural extension and education in 1995 from the University of Idaho. Alan teaches at Meridian High School focusing on agricultural mechanics, agricultural business management, and leadership. Continually working to expand the Meridian High School vocational agricultural program, he has worked closely with the CALS dual credit program for college-bound high school students.



STEVE BERGLUND '76, '79, Moscow, is currently operating his 2,000-acre wheat farm. Steve has served on the University of Idaho Department of Agricultural Economics and Rural Sociology advisory board and the Idaho Wheat Commission in Boise. He is pictured above with Associate Dean John Foltz at left and Dean John Hammel at right.



SALLY HARRIS '69, '01, Boise, works for the Meridian School District as a professional- technical education administrator. She is also recognized for her work integrating professional-technical education into the K-12 curriculum.

MIKE DAVIDSON '73, Knoxville, earned his undergraduate degree in microbiology from the University of Idaho, and then went on to earn his M.S. and Ph.D. degrees. He is a teacher and researcher in food microbiology at the University of Tennessee where he serves as the food science and technology department head.

ALUMNI ACHIEVEMENT

BEN EBORN '01, '02, Driggs, earned his B.S. in agribusiness in 2001 and his M.S. in agricultural economics in 2002 from the University of Idaho. As the University of Idaho Extension educator for Teton County, Ben has contributed a great deal to community development, farm and ranch management, and 4-H youth development through presentations, lectures, grant writing, and publications.



TROY WHITE '01, '02, Arimo, (above) earned his bachelor's and master's degrees at the University of Idaho in agricultural and extension education. Troy has transformed the FFA program at Marsh High School in Arimo.

LETTER

Dear Alumni and Friends:

It is my pleasure, on behalf of the College of Agricultural and Life Sciences Alumni and Friends Association, to welcome you to this edition of *Programs & People* and let you know about some exciting changes in our association.

Please visit our CALS alumni and friends website www.uidaho.edu/cals/friendسالumni to view the current board of directors list, updated by-laws, recognition award details, and other information. Through the Alumni and Friends Association, members are keeping in touch with friends, developing networks in their fields of interest, and continuing the lifelong learning process. Members are encouraged to become active in the association by assisting with student recruitment, representing the college at university and professional events, and helping in the development and hosting of student and alumni events.

One of our goals this year was to invite all CALS alumni to a breakfast and then our annual meeting held on campus in conjunction with October 7 to 9 Ag Days. I hope everyone who attended enjoyed visiting with new and old friends. Our association has also updated our by-laws and has a complete board of directors from across Idaho to serve you.

For this issue of *Programs & People* magazine, the classnotes section is minimal. The college has received few class notes submissions via the magazine form online. Therefore, there are few updates to provide you. Is this a service you would like to continue? If so, we need your feedback and updates!

I also want to congratulate those who received CALS Alumni and Friends Awards this year. Their commitment and contribution to the University of Idaho is greatly appreciated.

Go Vandals,

President, 2010-2011,
CALS Alumni and Friends



photo by GAYLE ANDERSON

Andersons donate wheat and a “grand-angel’s” joyful face

First, a wheat donation, and then—by happy accident—this glowing 2-year-old’s face in 2011 came to represent the University of Idaho College of Agricultural and Life Sciences (CALs). The golden image above stretched as the centerpiece across an 8-foot-tall display in the Ag Pavilion at Boise’s Western Idaho State Fair and Twin Falls’ Eastern Idaho State Fair in 2011. More about the photo later.

About the wheat—1,000 bushels of it, grown in Genesee in 2010—was donated to CALs in May 2011—contributing nearly \$5,000 to the recently created faculty enhancement endowment fund. “With the budget shortfalls and crisis we’ve gone through at the state level, we just felt this was something we could afford to do,” said UI CALs alum Joe Anderson ’81, who made the donation with his wife Gayle, brother Jay ’85, and sister-in-law Lisa Anderson ’85. “We recognize the importance of the college’s research and the need for growers to support it,” Joe said.

The Andersons raised the donated winter red wheat on their family’s Idaho Century Farm in Genesee, founded in 1902. Dean John Hammel said farmers who donate crops to the college, “can gain significant tax benefits while knowing that their donation is targeted directly to supporting students and faculty who work tirelessly to improve Idaho’s crops.”

Natalie’s smiling face, above, came to our attention when our art director Shane Jackson needed a fresh image for CALs’ display at Idaho’s big fairs, something that celebrated Idaho agriculture. She Googled “Idaho harvest” and found a blog by Genesee’s Gayle Anderson titled, *A Glorious Life of an Idaho Farmwife*. It was illustrated with photographs including this one of her “grand-angel.” Shane had hit the jackpot.

“Natalie loves everything farming,” said Gayle. Natalie is the daughter of Joe and Gayle’s daughter Jennifer and Soren Lowe. “In this photo she was especially excited because she was soon going to ride in the harvester you see in the background with ‘Papa Joe,’” added Gayle.

The Andersons are 4th generation farmers and 3rd generation Vandals. Other family alums include daughter Kaitland ’11, and Joe and Jay’s father Laverne ’53, who has retired from farming and lives in Lewiston.

In addition to maintaining her own blog at <http://www.idahofarmwife.net>, Gayle created a site that brings together many farming and food production websites and blogs at <http://www.farmerinc.net/>.

Anyone interested in donating crops or farmland to the college should contact CALs Director of Development Kim O’Neill at kimoneill@uidaho.edu.

by MARY ANN REESE

Hop in my station wagon! Join me on a weeklong virtual UI Extension "ride along."

PROPERTY OF
IDAHO
18 *Vandals* 89
VANDALS



<http://www.uidaho.edu/extension/canyon/mastergardenerandhorticulture>
<http://growvandals.wordpress.com/>
http://twitter.com/#!/GROW_Vandals

Website
Blog
Twitter



One Week

WE ALL FIND OURSELVES BEING ASKED: “What do you do for a living?” Sure, I have my elevator speech: “I am a horticulture educator with University of Idaho Extension in Canyon County. As UI Extension faculty, we work with Idaho residents to tackle youth, community, family, environmental, natural resource, and agricultural issues through our land-grant mission of teaching, research, and extension.” But, already, even my eyes glaze over. And is that really what I do?

It's hard to describe UI Extension work. To reach our audiences when it's convenient for them, we work nights, weekends, even holidays. We plan, teach, train, facilitate, write, research, evaluate and report, connecting with hundreds, if not thousands of people every year directly. **Hop in my station wagon!** Join me on a weeklong virtual UI Extension “ride along.” I chose a particularly busy week last February.

Monday, February 21. President's Day. A paid holiday. My night to teach our Treasure Valley Living on the Land class in Meridian, and the participants' soil test results are back from the lab! Fellow educator and course organizer Stephanie Etter will be there, too. She's worked every President's Day since 2005! We spend the evening on soil science basics and discuss the most suitable crops, pasture, or garden plants.

Tuesday, February 22. I'm in my Caldwell office, responding to e-mails, finishing up tomorrow's lecture for my Master Gardeners-in-training and developing an outline for my bi-annual *Dig In!* newsletter. I submit ideas for a summer 4-H gardening day camp and search files for photos for a March talk on edible landscaping at Deer Flat Wildlife Refuge.

At 4 p.m. I head for Farmway Village, nearby housing originally intended for migrant farm workers. Colleague Nancy Shelstad and I teach gardening for a weekly 4-H afterschool program: 12 to 24 children come, all from Hispanic backgrounds, some with limited English. We use hands-on activities from the Junior Master Gardener curriculum, chosen by two of our newest certified JMG volunteers. What would we do without them?

Wednesday, February 23. I arrive at the office to find our amazing Canyon County staff has set up tables and chairs

for me. From 9 to noon, I'm in class with my newest “crop” of Master Gardeners. We'll meet for 16 weeks before they start their volunteer service, answering consumer gardening questions and putting new skills to work in their communities. They keep me on my toes. Next comes a call to plan the 2012 National Small Farms Conference in Tennessee.

Afternoon, it's home to see my always-supportive husband, James. I'm back at 6 p.m. for our final Backyard Poultry Class with organizer Stephanie Etter. I've been a student here: Tonight I teach “Fowl Play in the Garden”—how to protect gardens from chickens and how to compost manure—almost 100 pounds per bird per year!

Thursday, February 24. It's going to be another long day away from home, so my Sheltie Oliver joins me and naps while I catch up on e-mails, return phone calls, brainstorm with a small-acreage landowner on potential enterprises, and take a walk. **5 p.m. Nampa. Our Idaho Victory Garden series.** This 6-week class readies 50 participants to economically plan, plant, harvest, and preserve more of their own food at home. Advanced Master Gardener volunteers help teach seed starting and raised bed gardening. Two class members in electric wheelchairs are thrilled that raised-bed gardens could get them growing again. Head home by 10 p.m.

Friday, February 25. Out early, I pick up doughnuts and get to Camille

Beckman Factory's small orchard in Eagle by 8:30. We've asked Essie Fallahi, pomologist from the UI Parma Research and Extension Center, to teach regional Master Gardeners a fruit class and demonstrate pruning. Also invited: our current Living on the Land, Backyard Poultry, and Victory Garden students. Essie does a tremendous job, and the crowd is happy. By late afternoon we all head home to thaw.

Saturday, February 26. Morning. I meet Katie Painter, a Living on the Land alumni who coordinates Global Gardens for Idaho's Office for Refugees. We partner on a USDA Beginning Farmer and Rancher Grant project, training refugee farmers about horticulture and marketing. Enroute, I purchase meat thermometers, which work surprisingly well for soil, and join Katie and 12 refugee students at a Boise community garden. We talk about cool vs. warm weather crops and why temperature is so important for sprouting seeds.

Thanks for coming along on the ride. When I feel that I'm helping my community learn and grow and I'm sharing our university with people from every walk of life, my work is truly meaningful to me.

There is never time to be bored. We need to spread the word! See for yourself at www.uidaho.edu/extension and share with others. And tune in to my web, blog, and tweets.



COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
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THE ALUMNI & FRIENDS ASSOCIATION assists the college with alumni events, helps recruit students, and promotes the College of Agricultural and Life Sciences wherever and whenever possible. If you are interested in becoming active or in filling a vacant position on the board, please call 208.885.7984 or send an e-mail to CALSAlumni@uidaho.edu.



COLLEGE OF AGRICULTURAL AND LIFE SCIENCES

Winter-Spring 2011-12 Events Calendar

NOVEMBER 2011

21-25 Fall Recess
 24-25 Thanksgiving Holiday—UI Closed

DECEMBER 2011

3 Vandals vs. University of Nevada at Reno, NV
 6 Alumni Holiday Event, Davenport Hotel, Spokane
 8 Alumni Gingerbread House Dinner, Moscow
 9 Alumni Awards for Excellence Banquet, Moscow
 10 Winter Campus Commencement, Moscow
 17 Close of Fall Semester
 26-30 Christmas Holiday—UI Closed to Public

JANUARY 2012

2 New Year's Day observed—UI Closed
 11 Spring Semester Classes Begin
 16 Martin Luther King Day/Idaho Human Rights Day—UI Closed
 TBA Ada County Silver and Gold, Boise

FEBRUARY 2012

3-4 UI Alumni Association Board Meeting, CDA
 7-9 Spokane Ag Expo & Pacific Northwest Farm Forum, Spokane
 15 All CALS Award Nominations Due, Including Alumni & Friends
 20 President's Day—UI Closed
 21 CALS Alumni and Friends Board Meeting, Boise
 20-22 Larry Branen Idaho Ag Summit, Boise
 22-23 Leadership Idaho Ag Alumni, Boise
 22-25 Lionel Hampton International Jazz Festival in Moscow

MARCH 2012

12-16 Spring Break Recess
 30 Vandal Friday

APRIL 2012

13 Vandal Friday
 TBA Moscow Silver and Gold
 20 4th Annual CALS Wine and Cheese Tasting
 20-22 Mom's Weekend
 23 CALS Spring Awards Banquet

MAY 2012

2 UI Commencement—Boise
 3 UI Commencement—Idaho Falls
 7 UI Commencement—Coeur d'Alene
 10 Alumni Hall of Fame Reception
 11 Alumni Hall of Fame Induction Luncheon
 12 UI Commencement—Moscow
 28 Memorial Day—UI Closed

classnotes

2010s

JESSI GOBLE '10, Troy, after graduating in child development with a specialization in disabilities, went to Connecticut to earn her North American Riding for the Handicapped Association (NARHA) certification. Back in Idaho last October, she worked for Palouse Area Therapeutic Horsemanship at WSU and volunteered for a program called PATH to Success, focusing on helping middle school children who experience social dilemmas. This summer she worked on her advanced certification for NARHA.

DEBRIANNE JOHNSON '10, Moscow, reports student teaching “was by far the hardest and most rewarding experience I’ve ever had. As soon as I got into that classroom, I knew I had found my calling. Yes, it’s terrifying being around teenagers again, but they can surprise you. As a student you don’t witness all the work that goes into planning and preparing a lesson. The FCS classes were always a joy because the students wanted to be there.”

2000s

LIZ BURKS '04, Twin Falls, used her bachelor of science degree in clothing, textiles, and design to become a design manager with Maggie Sottero Designs, an internationally known producer of bridal gowns.

PATCHES MOATS '07, Boise, Rocky Mountain High School FCS teacher, has been selected as the Idaho FCCLA coordinator. The organization focuses on the multiple roles of family members, wage earners, and community leaders.

RIKKI WILSON '02, '05, and **CODY RUIZ '05**, New Plymouth, share photo at right of their newest Vandal, Raelee Mae Ruiz, born February 18, 2011! Rikki, who got her bachelor’s in ag communications and integrated management and her master’s in ag education, is UI Extension educator in Gem County’s Emmett office. Ruiz got his degree in ag systems management and now owns Cody Ruiz Livestock and Trucking.

LAURA WOMMACK '03, Moscow, won one of 50 NASA Endeavor Fellowships that will result in a certificate in STEM Education (science, technology, engineering, and mathematics) and 15 graduate level credits. She’s working with NASA professionals across the country.

1990s

TRICIA E. DURGIN-MEERTEN '96, '00, Fullerton, CA, announces she was married on July 17, 2010 to André C. Meerten. She is a sourcing manager at Houdini/Wine Country Gift Baskets. They moved from Oregon and love California’s warm weather.

1980s

SENATOR MELINDA S. SMYSER '81, Caldwell, has worked for the Caldwell School District as the safe school coordinator for 13 years. She also is state senator for District II. “I use many of the things I learned in my days at UI on a daily basis,” says Smyser. Her son and daughter are studying at UI.

1970s

BETTY SAWYER '72, '77, Potlatch, won \$7,500 and the Leavey Award for Excellence in Private Enterprise Education for her entrepreneurship class school-based businesses. She won for businesses that she and her students run out of Potlatch High School, including machine embroidery, snack sales, and jump rope making and sales.

1960s

IRMA HALEY '69, Twin Falls, reports she now lives in a retirement home and is “enjoying all of the perks.” She keeps in touch with former students, and tries to keep up with news and developments in the home ec field. In 2010, she and her husband, J. Roy celebrated 70 years of married bliss and both turned 90. We express our condolences that she has now lost her husband.



IS THIS OUR LAST CLASSNOTES PAGE?

Only two classnotes in the last year were mailed or e-mailed to us, so most notes on this page are borrowed from the UI Department of Family and Consumer Sciences magazine. If you want us to continue classnotes, please email us your information at www.cals.uidaho.edu/classnotes/ or to calsalumni@uidaho.edu.

IN MEMORIAM

Robert C. Alldaffer '50
Dairy Science
Soda Springs, March 18, 2011

George J. Brabb '50, '54
Economics, Agricultural Economics
Lake Forest Park, WA, May 13, 2011

William G. Briggs '51
Plant Science
Othello, WA, June 2, 2011

Evelyn B. Bulen '72
Home Economics
Lewiston, July 20, 2011

Marlene M. Bunderson
Saint Charles, March 29, 2011

Barbara P. Carey '39
Home Economics
Moscow, June 13, 2011

Edna Denning '40
Home Economics
Ammon, March 19, 2011

Lois Lucille Doyle '68
Food and Nutrition
Spokane, WA, April 30, 2011

Sally J. Gaidos '75
Clothing, Textiles, and Design
Renton, WA, May 5, 2011

Marie Halverson
Elk River, April 18, 2011

Oba A. McCoy '56
Agriculture: General
Moscow, June 7, 2011

Raymond Otis Murphree Jr. '76
Animal Science
Lewiston, Feb. 2, 2011

H. Dean Stevens '51
ASC Plant Science
Priest River, June 9, 2011



Programs & People | ONLINE

www.cals.uidaho.edu/pnp

IN THIS ISSUE

PNW land-grants slowed soil erosion by up to 75%
Now \$20 million helps us to prepare ag for climate change

Just what is it you do in UI Extension?
Ride along with Ariel to find out from one horticulturist

CALS student interns help Idaho refugees
Learning about cultures and organic gardening in Boise



photo by MARK LAMOREAUX

Rolling Hills Derby Dames in CALS? Yes! The women roller derby skaters who live and compete in the Moscow area needed uniforms—just the job for Lori Wahl's 6-week summer capstone *Apparel Design and Development for a Client* class. Three teams of UI clothing, textile, and design majors each created a 5-piece uniform collection after interviewing and watching their clients skate, measuring, brainstorming, pattern drafting, sewing, and re-sewing. On June 23, 2011, the Derby Dames arrived at Nicolls Hall, complete with skates, to model and vote on their favorite. The green and black design grouping won, but the athletes confessed they loved them all. **Standing by their models** are design students (from left) Jie Xiao, Xiaodong Yu, Kelsee Morefield, Torie Larson, Cammy Kuchenski, Mary Brown, Amy Ownbey, Serafina Harney, On On Wong, Erica Lora, and Carli Tallent. Lori Wahl '93, instructor, is at center. **See a video** at www.cals.uidaho.edu/edComm/magazine/winter2012.