

Programs & People

University of Idaho

College of Agricultural and Life Sciences

Summer 2009



page 5



page 23



page 33

Amber waves of grain

CALS and Idaho Wheat Commission
Celebrating 50 years of collaboration

Summertime Stingers
Strategies for picnicking
with wasps, hornets **8**

Dual Credit
High schoolers get college
credit in ag classes **18**

Stretching Dollars
Helpful tips for making the
grocery budget go farther **30**

Wheat—1.4 million acres of it—is grown throughout Idaho. Southeastern Idaho produces 630,000 acres; the northern quarter of the state grows another half million acres. The remaining 300,000 acres grow in southwestern and southcentral Idaho. In 2008 wheat surpassed hay and regained the title of Idaho's second-largest crop-revenue producer. Revenues for 2008—some \$707 million—were up 55% from 2007, according to year-end estimates by UI agricultural economists.

Photo © JULIEASHA/DREAMSTIME.COM.

Programs & People is published twice a year by the University of Idaho College of Agricultural and Life Sciences and is available free by subscription.

JOHN HAMMEL, DEAN

JOHN FOLTZ, ASSOCIATE DEAN AND
DIRECTOR OF ACADEMIC PROGRAMS

GREG BOHACH, ASSOCIATE DEAN AND
DIRECTOR OF THE IDAHO AGRICULTURAL
EXPERIMENT STATION

CHARLOTTE EBERLEIN, ASSOCIATE DEAN
AND DIRECTOR OF UI EXTENSION

EDITOR: MARY ANN REESE
ART DIRECTOR: SHANE JACKSON

Send address changes to:
Dean's Office, College of Agricultural
and Life Sciences, University of Idaho
Moscow, ID 83844-2331
or call 208.885.6681

Direct your comments, questions,
and subscription requests to:
Editor, Programs & People
Educational Communications
P.O. Box 442332
University of Idaho
Moscow, ID 83844-2332
mreese@uidaho.edu

The University of Idaho is an equal
opportunity/affirmative action employer
and educational institution.

LETTER FROM THE EDITOR

Wheat is wheat. Right? Since I moved to the Palouse in 1999, surrounded by rolling hills of wheat, it hadn't occurred to me to ask what kind of wheat, other than winter and spring. As usual, assignments for this magazine end up educating me, and hopefully you too. I was surprised to realize there are six classes of wheat. Idaho grows at least five of them.

The best wheats for making bread, for example, aren't necessarily the best wheats for producing noodles. Growers have to choose each season which of hundreds of varieties of wheat they will grow and for which uses. Our stories by **Marlene Fritz** starting on page 10 may give you more respect for the growers, millers, bakers, noodle makers, and scientists who come up with the best varieties to serve Idaho's important wheat industry.

UI alums waste no time. With new degrees fresh in hand, alums from our college are heading off to all ends of the earth to help solve problems, from Sub-Saharan Africa, where soils are badly depleted, to former Republics of the Soviet Union, where growers are still scrambling to move from the Soviet era of mono-crops to more diverse crops to feed their now smaller nations. Then there are Idaho-born honeymooners who started their married life helping youth and farmers in Jamaica. Staffer **Marlene Fritz** and UI alum/free-lancer **Andrea Vogt** tell their stories beginning on page 23.

Want to discourage stinging insects from your picnic? Find tips on pages 8 and 9; and much more in a trio of new publications free online.

Why not go to college while you're in high school? Five Idaho students doing just that—thanks to a new UI CALS Dual Credit program—tell staffer **Bill Loftus** about challenges they've faced.

We hope you enjoy this issue. If you have story ideas or suggestions, please share them with me.

MARY ANN REESE, Editor
mreese@uidaho.edu



Programs & People

FEATURES

50 Years of Wheat 10

UI scientists & Idaho Wheat Commission
 Together with growers, millers, and bakers, they're steering Idaho's \$646 million/year crop in new ways
by Marlene Fritz

Credit Before College 18

High schoolers jumpstart college
 Some 400 Idaho students test new program
by Bill Loftus

Abu Ghraib, Africa, Boise, Jamaica 22

CALS alums waste no time helping globally
 Meet six alums who follow degrees with heartfelt adventures
by Marlene Fritz & Andrea Vogt

6 Tips for Idaho Victory Gardens 28

UI Extension helps Nampa gardeners
 Many more suggestions are at UI Web sites
by Marlene Fritz & Ariel Agenbroad

Stretching Family Food Dollars 30

Tips for curbing those impulse buys
 UI Extension nutrition gurus share best practices for hard times
by Marlene Fritz

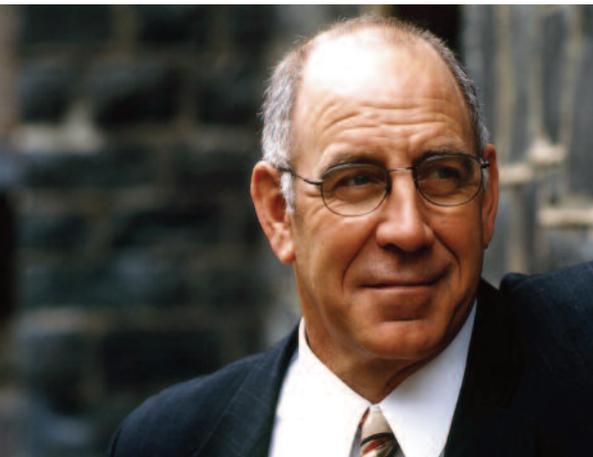
IN EVERY ISSUE

Dean'sView	BookShelf
John Hammel4	High altitude garden help . .4
ScienceUpdate	RootsAlumni
Battling hops pests5	Class notes31
\$\$ help from UI Extension . .6	Calendar32
Trout and selenium7	Alumni awards34

Reuben McLean '08, would have completed his UI master's in plant science much earlier had Idaho's only flour mill—Pendleton Flour Mills—not offered him the job of managing all wheats coming into the Blackfoot facility and all flour leaving it. He accepted the job in 2001 when he was working at the UI Aberdeen Research & Extension Center as a student.

photo © PAM BENHAM





dean's view
JOHN HAMMEL

TEACHING, RESEARCH, AND EXTENSION make up the mission of the College of Agricultural and Life Sciences.

Tests and trials, usually field trials, are the core components of that mission. We test students' comprehension of what they've learned. We conduct field trials to learn how crops and cultivars respond to management or conditions.

Tests and trials have taken on new meaning for the college and its faculty and staff. We, like all Idahoans and Americans, are experiencing tough economic conditions and even tougher choices in recent months.

As educators and researchers, we have to stick to our fundamentals. We have to ask, what have we learned in 108 years since the University of Idaho Regents formed the college, and what have our past trials revealed?

From those perspectives, this magazine offers some important lessons.

Our educational efforts are having an important impact on the world, from helping Idaho high school students prepare for college to our graduates who are addressing important issues from within our state and on to Africa, Baghdad, and Jamaica.

As a research organization, our work has been as fundamental as helping Idaho growers give us our daily bread. Wheat provides one of the state's staples and one of Idaho agriculture's forces that help to stabilize our economy. The college's ties to the Idaho Wheat Commission yield benefits to the state and the world.

UI Extension takes the findings of our researchers and helps growers apply them to weed control, irrigation, and management to ensure they reap the best quality crops and highest yields. Home gardeners can rely on UI Extension educators to plant successful victory gardens. Youth leadership development through 4-H is another initiative that links thousands of families and volunteers each year.

A magazine or even a college textbook really can only provide a snapshot of a moment in time of our world or our understanding of it. One thing that we know is our mission is important to Idaho. We won't pass the current test by forgetting that.

bookshelf

GARDENING SERIES ONLINE

Short-Season, High-Altitude Gardening

Growing productive plants in Idaho's high desert or mountain regions above 4,500 feet requires an attention to detail rarely discussed in popular garden guides.



To the rescue comes UI

Extension's Steve Love, community horticulture specialist at the UI Aberdeen Research & Extension Center. Love's team this year produced nine publications in the Short-Season, High-Altitude Gardening series. All are available free to download this summer at <http://info.ag.uidaho.edu:591/catalog/gardening.html>.

Topics range from the importance of managing soils to selecting and planting trees, shrubs, and vines; annuals, perennials, and ornamental grasses; landscaping with native plants; choosing and growing vegetables and fruits.

HERE ARE SAMPLE TIPS:

Microclimates are important, especially ones providing extra warmth, such as southern exposures next to buildings. In the Sun Valley area, for example, close neighbors may have significantly different microclimates.

Raised planting beds warm faster in spring than do ground plantings, an aid when growing vegetables and flowers.

Don't over fertilize: Applications for short-season gardens should be reduced by one-third to one-half over long-season garden recommendations.

Irrigation needs: Insufficient water during spring and summer slows plant development and delays maturity. Cutting back on water in fall can help plants acclimate for winter.

The series includes climate maps and color photos.



photo by ESSIE FALLAHI

Drip could cut irrigation water in half for Treasure Valley orchard

Rather than drip-drip-drip away his profits on sprinkler irrigation, fruit grower Chad Henggeler is testing drip irrigation this year in a new block of apples at family-owned Henggeler Orchard in Fruitland.

A 1996 University of Idaho political science graduate with a minor in agricultural economics, Henggeler hopes to harvest the benefits of nine years of research by UI fruit tree physiologist Essie Fallahi at the nearby UI Parma Research and Extension Center. Compared to conventional impact sprinklers he typically uses, Henggeler expects to cut water use in half. He plans to save additional dollars by closely coordinating his irrigation scheduling with weather data and by delivering fertilizer directly to his trees' root zone in six tightly controlled drip applications.

In Caldwell, Symms Fruit Ranch is expanding drip irrigation again this season. Field operations manager Jamie Mertz credits Fallahi with "positively influencing us into using it."

Fallahi has shown that drip irrigation produces optimal yields of high-quality Fuji and Gala apples with 40 percent less water compared with microjet sprinklers and 55 to 60 percent less water compared with impact sprinklers, while reducing the threat of collar and root rots. "I'm confident that it pays off, not only based on water savings, but because we're giving the trees very precisely what they need and getting a perfect balance between shoot and fruit growth," he says.

Fallahi is continuing his research with investigations into irrigation-fertilizer interactions and deficit drip irrigation—applying less water than apple trees are traditionally thought to need.

Contact Essie Fallahi at efallahi@uidaho.edu.

by MARLENE FRITZ



photo by JIM BARBOUR

Birds and bees to battle prionus beetles

The adults are 2-inch-long beetles and the young are 3-inch-long larvae, so you'd think catching and killing the California prionus beetle—the fiercest pest of hop yards—would be relatively easy. But you'd be wrong.

That's because it spends most of its 3- to 5-year lifespan underground, feeding on roots of perennial crops. A member of the long-horned beetle family, it surfaces for only a few weeks in summer to mate and lay eggs before dying.

That's where a team of scientists that includes UI entomologist Jim Barbour is intercepting it. The weapon they identified: the first pheromone ever to attract a long-horned beetle male to a female. Placed in traps around hop yards, it holds promise in mating disruption, mass trapping, and attract-and-kill systems against California prionus as well as clues to thwarting its long-horned cousins.

Since 2004, Barbour and his research partners—Larry Hanks of the University of Illinois and Jocelyn Millar of the University of California—have conducted laboratory and field experiments to find the pheromone. Last year, they identified its active component as an isomer of 3,5-dimethyldodecanoic acid. At doses as low as 10 billionths of a gram, it was highly attractive to California prionus males creeping through plastic "olfactometers." In the field, as little as 10 micrograms drew them into lures.

Another year or two of testing may be all it takes to launch commercial product development, Barbour says. "We have no way of managing this pest now—except for taking out hop yards—so growers really need this. It's very active at very low doses and has the potential to be a very safe, effective tool."

Contact Jim Barbour at jbarbour@uidaho.edu.

by MARLENE FRITZ



photo by KATHY STEWART-WILLIAMS

Idaho bean seed deal with Mexico

A FEDERAL marketing grant awarded to the Idaho Bean Commission and Idaho State Department of Agriculture has grown into a rewarding partnership with the University of Idaho's Foundation Seed Program at Kimberly, Idaho companies, and bean producers in Mexico.

The grant, said Kathy Stewart-Williams, foundation seed manager, "helped promote Idaho certified seed and expand sales into Mexico because we grow fantastic seed here in Idaho."

From 2004 to 2008, Global Trade Information Services reported Mexico's dry bean seed imports from Idaho more than doubled from 23 to 52 percent of market share, said Diana Caldwell, Idaho Bean Commission executive director.

The first year of field trials in Mexico's rich agricultural state of Sinaloa proved the program's potential in 2006. "We learned Idaho seed held up really well in their production conditions," Stewart-Williams said. She presented a popular planting seminar at Mexico's largest agricultural expo in February.

Contact Kathy Stewart-Williams at williams@kimberly.uidaho.edu.

by BILL LOFTUS

Helping Idaho crop producers manage costs

IN 2008, THE OPERATING COSTS of producing potatoes spiked 20 to 24 percent over 2007, led by fertilizer price surges of 75 to 82 percent and machinery operating expense hikes of 33 to 40 percent. In 2009, if fuel and fertilizer expenses remain subdued, UI Extension economist Paul Patterson expects costs to rise no more than 5 percent.

Patterson keeps Idaho producers informed of operating and ownership costs of bringing their crops to market. "We've been seeing extreme volatility in both commodity and input prices," he says. "Growers can't control commodity prices, but they can control their input costs—and they need to focus their management attention on factors they can control."

Last year, Patterson and his colleagues updated 58 of CALS' 85 representative crop budgets, along with a Windows-based Crop Enterprise Budget Worksheet program that helps growers track their own field-by-field costs. This year, he'll add newly in-demand budgets for organic potatoes and Roundup Ready® sugarbeets, and a spreadsheet for calculating the fertilizer value of dairy compost and manure.

Contact Paul Patterson at pattersn@uidaho.edu. See crop budgets at www.ag.uidaho.edu/aers (click on Resources/Crops).

by MARLENE FRITZ

Extend your financial know-how

In federal fiscal year 2008, University of Idaho Extension educators taught 252 personal finance classes directly to 13,991 adults and youth. In 2009, the demand—and need—continue to mount.

Amidst the current economic upheaval, UI Extension family economics specialist Marilyn Bischoff says education helps. "At all income levels, people with financial plans feel more secure than those without," she says. "Research shows they're better prepared to handle financial crises."

To survive tough economic times, Bischoff reminds Idahoans to spend less than you earn; be future-minded; learn about and follow recommended financial practices; build human capital (education); make compound interest your friend; save and invest regularly; develop a personal asset-allocation strategy; honestly assess your risk tolerance level; diversify your investments.

To educate yourself online, she suggests subscribing to Idaho's Two-Cent Tips e-newsletter at <http://extension.ag.uidaho.edu/madison/itct.htm>. Find more help at a trio of UI Extension Web sites: www.extension.org/financial_crisis, www.extension.org/pages/Legally_Secure_Your_Financial_Future, and www.ag.uidaho.edu/lsyff/communicate.

To attend in-person trainings, contact UI Extension educators in your county (<http://www.extension.uidaho.edu/find.asp>) for the availability of such classes as:

Basic personal finance: Surviving the Recession, Dollar Decision\$, Credit Cents, Building Bucks, Credit Card BINGO, Saving \$ on Everyday Expenses, Building Emergency Savings, Getting Ahead in a Just-Getting-By World, Steps of Financial Freedom, and Strengthening Native Families.

Youth personal finance: Money on the Bookshelf, Fun with Money, 4-H Financial Champions, Personal Finance for Teens, and the real-world simulations That's Life, Welcome to the Real World, and So You Want to Move Out?

Later-life financial planning: You Can Retire Well, Legally Secure Your Financial Future, and Long-Term Care.

Contact Marilyn Bischoff at mbischof@uidaho.edu. Or, find many UI publications to buy or download for free at <http://info.ag.uidaho.edu:591/catalog/family.html>.



Upper Blackfoot River photo by RON HARDY

Cutthroat trout surprise researchers by shedding selenium toxicity

When Ron Hardy, director of the UI Hagerman Fish Culture Experiment Station, began studying selenium toxicity in cutthroat trout in 1999, he didn't realize what a startling journey he had initiated.

The fish he reared from eggs collected by Idaho Department of Fish and Game biologists revealed a tale never told before. Rather than accumulating selenium to levels toxic to adult or juvenile fish, the cutthroat stayed healthy, reaching and holding a constant body selenium level for more than two years.

An essential dietary nutrient, selenium can accumulate to fatal levels in grazing animals and some fish. Concerns about mining activities driving up selenium levels in Blackfoot River system cutthroat prompted the research. It was funded by MWH, a consulting firm working with both phosphate-mining companies and federal agencies.

At Hagerman, the fish were fed diets supplemented with varying levels of selenomethionine—the organic form of selenium found in the aquatic food chain. Even at the highest levels, Hardy's cutthroat were still healthy and growing after 12, 26, 44, and even 80 weeks; at 124 weeks, they spawned healthy offspring as well.

At 44 weeks, in order to simulate what might happen when cutthroat migrate into uncontaminated downstream waters, Hardy switched some of the fish fed selenium diets to a diet with no added selenomethionine. Amazingly, after 32 more weeks, fish previously fed the most selenomethionine showed the fastest reduction in body concentrations. "They apparently adapted to their selenium intake by modifying their rate of selenium excretion," Hardy says. "That hasn't been seen in any wild fish studies before."

Hardy attributes the unexpected results to species differences and the study's use of organic rather than inorganic selenium.

Contact Ron Hardy at rhardy@uidaho.edu.

by MARLENE FRITZ

Record \$16.5 million NIH grant continues research opportunities for Idaho youth

Idaho's biomedical research capacity will grow through a \$16.5 million grant from the National Institutes of Health to IDeA Network of Biomedical Research Excellence (INBRE). This largest scientific research grant in Idaho's history, directed by UI CALS Professor of Microbiology Carolyn Hovde Bohach, extends research opportunities for Idaho youth and faculty to 2014.

Nine universities and colleges and the Boise VA Medical Center provide research experience for college undergraduates and high school students. The grant also supports graduate students, post-doctoral researchers, and faculty through the IDeA network.

Since 2001, nearly 570 Idaho undergraduate students have spent summers conducting research with faculty thanks to the first round of NIH funding that created the Biomedical Research Infrastructure Network in Idaho.

INBRE support also enhanced laboratory technology throughout Idaho, including the creation of a bioinformatics core for multi-institution data sharing.

"This award is important for Idaho as it allows us to continue the network of collaborative educational outreach and biomedical research supported by the NIH National Center for Research Resources," Bohach said. "These experiences allow students to build their skills and explore biomedical careers. Participants have since gone on to pursue graduate studies, becoming researchers, physicians, and other biomedical professionals."

Providing projects and student researchers are the University of Idaho, Boise State University, Idaho State University, North Idaho College, Lewis-Clark State College, The College of Idaho, Northwest Nazarene University, College of Southern Idaho, and Brigham Young University – Idaho.

Contact Carolyn Hovde Bohach at cbohach@uidaho.edu and see www.sci.uidaho.edu/inbre.

by BILL LOFTUS

Summertime Stingers

Managing wasps, hornets at home

NO IDAHO SUMMER IS COMPLETE without an *al fresco* meal. And perhaps no such meal seems complete without inevitable yellowjackets or other stinging insects buzzing your face and arms and dive-bombing your entrées and drinks.

Why do they come, and are there ways to discourage such guests?

Answers are in a new trio of publications by University of Idaho entomologists who tackle everything you want to know about stinging insects living in and around Idaho homes. (See box page 9).

While the purpose of the three 8- to 16-page color-illustrated bulletins is to help homeowners consider a variety of ways they can manage these insects, publications also offer a valuable guide to nesting habits and lifestyles of bees, hornets, wasps, yellowjackets, flying ants, mud daubers, and other common Idaho stinging insects.

Each provides fascinating close-to-home natural science information to help adults and youth alike better understand our world. For example, when did German yellowjackets—more aggressive than our native yellowjackets—immigrate to Idaho? (During the 1980s.) And why are Africanized “killer” bees unlikely to get a year-round foothold in Idaho? (Our winters are too cold for their survival.)

“Most of these insects should be left alone because they are beneficial,” says lead author Ed Bechinski, University of Idaho entomology professor and coordinator of pest management for UI Extension. “They play important roles in controlling other insect populations like aphids, caterpillars, and grubs. And many of them serve the important role of pollinating plants,” adds Bechinski. Control is needed mainly when nests are too close to places where humans hang out.

Other authors include Frank Merickel, manager of the UI CALS Barr Entomological Museum; graduate research assistant Lyndsie Stoltman; and Hugh Homan, UI professor emeritus of entomology.

Strategies to protect late summer picnics

Yellowjackets may be the worst offenders annoying out-of-doors dining. That’s because by late summer their natural living prey are gone, forcing these sleek hairless yellow-and-black insects to compete with you for your sweet drinks and protein.

AUTHORS OFFER THESE SUGGESTIONS:

- **YELLOWJACKET TRAPS.** Place 6 to 12 yellowjacket traps at intervals at least 20 feet from your proposed dining or gathering spot. (Such traps placed too close to the gathering area become yellowjacket invitations to your party.)
- **FLICK, DON’T SWAT, DON’T CRUSH BODIES.** Do not swat at flying stinging insects; some will release air-borne chemicals—called alarm pheromones—that could stimulate a stinging attack from other workers. If a wasp lands on you, flick it away with your finger. Never crush the bodies of workers, especially near the nest; crushing also releases alarm pheromones that induce a mass attack.
- **MINIMIZE USE OF PERFUMES, colognes, soaps, or other scented body lotions** when yellowjackets, bald-faced hornets, and paper wasps can be expected; these scents can be highly attractive to foraging wasps.

story by MARY ANN REESE



photo by DREAMSTIME.COM



- WEAR WHITE OR TAN CLOTHES rather than light blues or bright pinks, reds, and oranges; close-fitting shirts and pants are better than loose-fitting clothes because wasps are less likely to become accidentally trapped against the skin.
- COMMERCIAL MOSQUITO/TICK REPELLANTS DON'T WORK against stinging insects. Indeed, it is possible that the scents of some products attract yellowjackets and other wasps.
- COVER SERVING DISHES at outdoor picnics; clean up spilled drinks and food scraps; clear away dirty plates.
- DO NOT LEAVE SOFT DRINK CANS OR BEER BOTTLES OPENED and unattended; yellowjackets can crawl unseen into open containers and sting painfully around the mouth.
- KEEP LIDS ON TRASH CANS and dumpsters; clean to remove attractive odors or use disposable can liners; rinse cans and bottles before placing in outdoor recycling bins.
- MOVE FOOD GARBAGE AWAY from patios or places where people congregate.

- PET FOOD. Don't leave moist pet foods outside.
- APHID CONTROL. Control infestations of aphids and scale insects that produce honeydew on landscape trees and shrubs. They attract some stinging insects.
- ELIMINATE DRIPS FROM FAUCETS, sprinklers, and garden hoses, especially during the dry parts of the summer. Puddled water attracts workers.
- CLEAN UP ROTTING APPLES and peaches that fall from trees; pick cane berries before they over-ripen.
- REPLACE LATE-FLOWERING landscape plants around decks and patios with non-flowering ornamentals.

COLLECT HORNET NESTS

LARGE PAPERY NESTS built by aerial yellowjackets and bald-faced hornets in landscape trees and shrubs—visually interesting and by fall often as large as a soccer ball—can be brought into homes safely during late fall.

Authors suggest that on cool November days you clip abandoned nests from branches, then bag and place in the freezer for one or two days. "Freezing kills any remaining workers or other insects—like earwigs—that sometimes live in old nests. Physically shake any dead insects and other debris from the nest; otherwise nests can become an odor problem," says the yellowjacket publication. "Papery nests are delicate and disintegrate quickly under harsh winter weather."

Order or download. The University of Idaho's new stinging insect publications include:

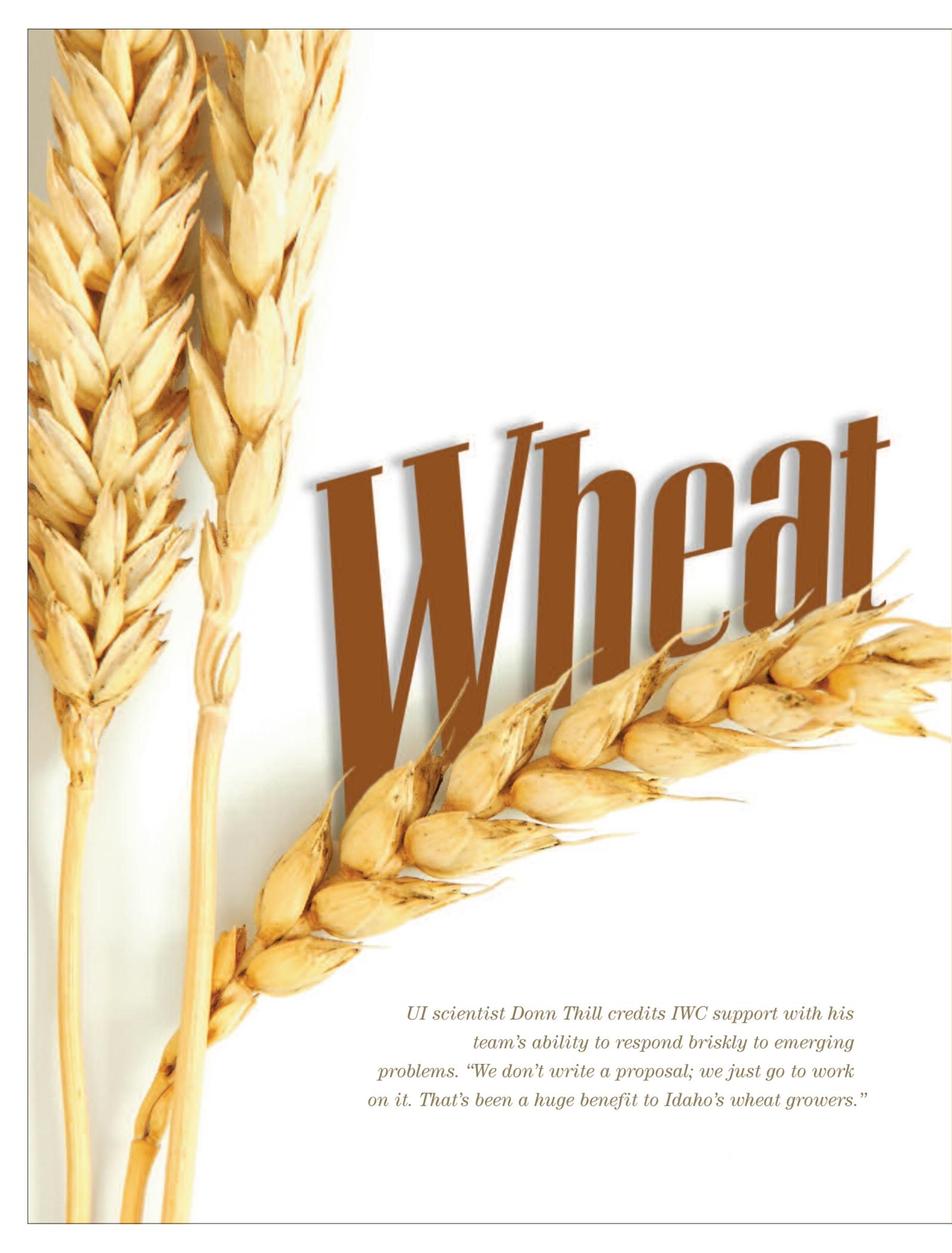
BUL 852 Homeowner Guide to Yellowjackets, Bald-faced Hornets, and Paper Wasps, 16 pages, \$4.

BUL 853 Homeowner Guide to Minor Stinging Insects, 8 pages, \$4.

BUL 854 Homeowner Guide to Bees, 12 pages, \$4.

Order them from the University of Idaho College of Agricultural and Life Sciences Publications Warehouse at 208.885.7982, or e-mail calspubs@uidaho.edu.

Free online. You can download them for free at <http://info.ag.uidaho.edu:591/catalog/default.htm>. Select "insect pollinators."



Wheat

UI scientist Donn Thill credits IWC support with his team's ability to respond briskly to emerging problems. "We don't write a proposal; we just go to work on it. That's been a huge benefit to Idaho's wheat growers."



50 candles on the cake ... the bread ... the pasta

stories by MARLENE FRITZ

IN INDONESIA, the common person subsisting on \$2 a day is choosing the street vendors' wheat-based noodles over fried rice costing twice as much. So says Mark Samson, Singapore-based vice president for U.S. Wheat Associates, the wheat industry's checkoff-funded (2 cents per bushel sold) market development organization.

In Vietnam, he notes, "There used to be zero outlets for bakery products in Ho Chi Minh City, and now there's one on nearly every corner."

Samson, who graduated from the University of Idaho in 1975 with a master's in agricultural economics, says wheat imports are up steeply in south Asia, and Idaho's wheat growers are well positioned to benefit.

By all accounts, 50 years of collaboration between the UI College of Agricultural and Life Sciences (CALs) and the Idaho Wheat Commission (IWC) deserves a generous share of the credit. That partnership has focused intense efforts towards developing top-quality, Idaho-adapted wheats in a range of market classes—wheats for noodles, pastries, and breads that meet diverse needs near and far. "Idaho wheats have done very well in the world market," says Samson. "We've avoided wide swings in quality."

At the IWC, Executive Director Blaine Jacobson says wheat is supplanting rice in Asia and corn in Latin America. He calls the UI CALs-IWC relationship a "win-win: the wheat growers are able to fund

researchers through the wheat tax they pay, and the researchers are able to break new ground in a number of areas on behalf of the wheat growers."

The IWC has even twice underwritten travel by CALs wheat breeders to the industry's farflung marketplaces. When Robert Zemetra, Moscow-based soft white wheat breeder, visited Japan, South Korea, Malaysia, Taiwan, and the Philippines in 2002, he sat down with Asian millers and bakers to discuss the qualities they sought in Pacific Northwest wheats. "We have a better idea now of what we're doing when we're selecting and crossing," he says.

Essential support for essential efforts

The IWC funds an average \$400,000-plus annually in CALs research and extension; over the past 15 years, it has contributed another \$1.1 million towards Ag Biotech Wing construction, greenhouse improvement, Idaho Wheat Quality Laboratory remodeling in Aberdeen, and farm and laboratory equipment purchases. Beyond variety improvement, it supports production and pest management research and UI Extension field trials, cereal schools, and publications.

In Moscow, weed scientist Donn Thill credits IWC support with his team's ability to respond briskly to emerging problems. "We don't write a proposal; we just go to work on it. That's been a huge benefit to Idaho's wheat growers."

"With the slow erosion of agricultural research funds from the state and federal government, the importance of the wheat commission's funds has

continued on page 13



Updating Idaho's wheat growers

Keeping Idaho's wheat growers advised of new varieties and strategies is another University of Idaho role.

UI Extension county educators are "the first stop when growers have a question," says Idaho Wheat Commission (IWC) Executive Director Blaine Jacobson. "When several growers have the same problem, UI Extension educators are able to respond to it. There's a great deal of credibility, respect, and information transfer that happens at that level."

Cereal schools. To keep growers informed of research-based advances in wheat genetics and production, the IWC and UI Extension co-sponsor nine Cereal Schools throughout Idaho each winter.

"The schools are very effective," says Jacobson. "They occur at a time when growers are making their spring planting decisions. Growers go to get updated on everything before putting their operating plans in place."

Stan Gortsema, Power County's UI Extension educator, says the IWC's input is "integral" to the schools' agendas, which include progress reports on varieties and pests as well as the season's "hot" topics. "The Cereal School is meant to be the 'teachable moment,'" he says.

Newsletter/Magazine. By funding Brad Brown's *Cereal Sentinel* newsletter and providing space in *Idaho Grain* magazine, the commission also helps CALS research and UI Extension faculty get the latest word out. Brown is UI Extension crop management specialist in Parma.

In Moscow, UI's Donn Thill is convinced the UI CALS-IWC relationship "strengthens" the information's value in the eyes of users.

Retired wheat grower Don McCormick of Parma kept tabs on CALS' studies, like Brown's work showing the yield-enhancing effects of early planting for both spring and fall wheats. "There was always a discussion of when winter wheat should be planted for the best yields, and we headed for the university's recommendations," McCormick recalls. ■

"Idaho wheats have done very well in the world market. We've been able to avoid wide swings in quality."

MARK SAMSON, UI class of '75
Vice President, U.S. Wheat Associates





photo by BRAD BECKMAN

continued from page 11 increased over time,” says Zemetra. More than 90 percent of his breeding program’s operating expenses are paid by the IWC, including fuel to drive to his plots.

Indeed, the IWC is among CALS’ top 10 funding sources, according to Greg Bohach, director of the college’s Idaho Agricultural Experiment Station. “We have extremely good relationships with the IWC commissioners and administration,” he says. “We meet with them throughout the year to assess priorities and see what the university can do to address them.”

Payoff in triple yields, better varieties

At the IWC, Jacobson says the biggest payoff has been continually improving wheat genetics. Since 1959, Idaho wheat yields have nearly tripled; Jacobson attributes half of that progress to new varieties and the other half to new ways of managing them. CALS’ extensive variety trials, he notes, enable Idaho growers at 600 feet or 6,000 feet, and in dryland or irrigated conditions, to identify those new releases from the Idaho Agricultural Experiment Station that are most likely to excel in their fields.

In Plummer, former IWC commissioner Sam Tyler remembers his frustration with severely lodged (randomly downed) tall, weak-strawed wheats before the three Pacific Northwest land-grant universities, including the University of Idaho, released Gaines soft white winter wheat in the early 1960s. “It was the breakthrough to the short-strawed, high-producing wheat that we now have, and it ballooned the production of wheat,” says Tyler.

According to Brad Brown, UI Extension crop management specialist in Parma, the higher-yielding semi-dwarf winter wheats prompted other changes as well. “With the increased potential for yield, you had an increased need for nitrogen, and that led to a more concerted effort to calibrate the soil test for nitrogen to wheat’s nitrogen requirements. The IWC was absolutely critical to that effort; we would never have done it without their support.”

Efforts by Zemetra’s predecessors Warren Pope and Donald Sunderman to develop wheats with resistance to stripe rust, dwarf bunt, snow mold, and other cereal diseases made such a



difference that Zemetra says simply: “It allowed growers to have a crop rather than losing it.”

During the past 50 years, wheat research has led to CALS releasing 65 varieties. CALS has also joined Washington State

University, Oregon State

University, and other states in the

release of 25 more. Fully 25 have earned

IWC’s “quality-plus” rating.

Kathy Stewart-Williams, who manages CALS’ foundation seed program from Kimberly, calls it a “long and very steady progression. We’re trying to meet as many different grower needs as we can, and I think we’ve done that very well.”

Three of the top five varieties planted in Idaho in 2008—Brundage, Alturas, and Madsen—were released or jointly released by CALS, as were such favorites for specific growing regions within Idaho as Lambert, Boundary, and Jefferson.

In Iona, Boyd Schwieder’s family has produced a wheat crop every year since 1915. Now, the former IWC commissioner and Idaho Grain Producers Association president grows primarily Brundage 96, a stripe rust-resistant enhancement of Brundage. “It’s just really easy to raise,” he says. According to Schwieder, CALS’ varieties have “definitely” improved growers’ profits—largely because their high flour yields and adaptability to multiple end-products make them “very easy to sell.”

Zemetra considers Brundage and Brundage 96 among his career milestones, along with Simon, his first strawbreaker foot rot-resistant line. The Brundage duo “combined high end-use quality with high yield potential and helped expand domestic demand for Idaho wheat.”

A long-term relationship for challenges

“It really is a team effort,” says Bohach of CALS’ contributions to the wheat industry. “Everybody works together: it takes the breeders, agronomists, entomologists, virologists, weed scientists, economists, and extension educators. And it takes the overall support of the industry. Over time, the issues will change. Our relationship allows us to be both proactive and reactive to emerging challenges.”

“All research is long-term,” adds Pat Dailey, IWC director of programs. “Nothing is really short-term.” Fifty years and counting. ■



What's next?

Hard whites and other 21st century priorities

NEWEST OF SIX globally recognized wheat classes (p. 16) is a hard white wheat (HWW) with a potential for yielding 1 to 2 percent more flour than hard red wheat.

Preferred for Asian noodles, hard whites also provide domestic and international consumers with whole-grain baked products free of the bitterness of hard reds. "Because you can mill the whole kernel, and the flour has a white color and a little bit sweeter flavor, all of the big millers have fast-growing product lines that use hard white wheat," says Blaine Jacobson, Idaho Wheat Commission executive director.

At the IWC's request, Aberdeen wheat breeder Ed Souza's successor Jianli Chen is focusing half of her efforts on hard white wheats.

Before her arrival in 2007, Souza had already released three hard white springs—Idaho 377s, Lolo, and Lochsa—and two hard white winters—Gary and UI Darwin. "Because two-thirds of our wheat crop is planted in the fall, we could take production to the next level with a good hard white winter," Jacobson notes.

According to Mark Samson, vice president, U.S. Wheat Associates, his organization has identified an additional 4 to 5 million tons of wheat exports that could be generated if U.S. growers produce more hard whites, "preferred for their higher percentage of flour and stronger protein level," he says.

At Aberdeen, UI Extension cereal cropping systems agronomist Juliet Windes and Idaho Wheat Quality Laboratory cereal chemist Katherine O'Brien are investigating the relative contributions of environment and genetics to the pre-harvest sprout damage that occurred in southern Idaho in 2008 and that often undermines the quality of hard whites in moister regions.

The future of the industry. Chen says growing conditions in southern Idaho's high desert are usually "perfect" for hard whites. She calls them "the future of the industry" and believes that Idaho will be a strong competitor in that marketplace. IDO 651—a potential 2009 release—is the first hard white winter wheat that resists damage from the grass herbicide imazamox.

Besides hard white winter and spring wheats, Chen is also breeding soft white spring wheats, hard red spring and winter wheats, and such specialty grains as waxy, low phytic acid, and biofuel wheats.

Resistance to stripe rust, dwarf bunt, foot rot, snow mold, and—more recently—stem rust and Fusarium head blight are top-tier priorities.

A new goal is developing varieties that withstand heat and drought and that will retain their competitive advantage despite global warming.

To speed her progress, Chen employs a novel technique called doubled haploid that rapidly stabilizes desirable traits and that can shave three to five years from release time. Working with the Western USDA Genotyping Center at Washington State University, she has also used molecular markers to evaluate 276 Pacific Northwest released varieties and historic lines for end-use qualities, disease and insect resistance, drought tolerance, and other important traits—an evaluation that reveals the sources of desirable characteristics and that could extend genetic variation sufficiently to produce significant hikes in yield.

Soft white wheat. In Moscow, UI wheat breeder Robert Zemetra currently emphasizes development of high-yielding, high-quality soft white wheats using marker-assisted selection for multiple-gene resistance to fungal and viral diseases and herbicide damage. These include shorter-strawed varieties particularly for irrigated fields. Because he starts all of his plants in the Ag Biotech Wing's growth chamber before transferring them to the greenhouse, his material has been "extremely" clean. "That may seem very mundane, but it's a big benefit for us when we're doing our crossing"—and it's another reason he's thankful for funding by wheat growers.



Testing Idaho wheat quality

The University of Idaho's first laboratory for the study of wheat quality was built in 1907 on campus in Moscow. J. Shirley Jones recruited Moscow housewives to help him test gluten content of wheat grown at different locations.

Housewives baked bread using batches of flour milled by Jones and reported their results on a scorecard he provided. It was the first lab of its kind in the Pacific Northwest.

Still, today, central to every new variety's release is its end-use performance, painstakingly measured at the Idaho Wheat Quality Laboratory (IWQL). The Aberdeen facility was first built in 1962 with funding from Idaho wheat growers and the Idaho Legislature and was expanded to 2,280 feet in 2005. UI wheat breeder Robert Zemetra calls it the primary contributor to varietal improvement. "It gave us a way to get our quality data in a more timely manner, which meant that we could make better selections for end-use quality."

Each year, IWQL cereal chemist Katherine O'Brien and her three technicians evaluate 12,000 to 14,000 individual wheat samples from statewide variety trials, screening them for milling yields, protein levels, and dough-mixing and baking qualities. "Without wheat industry support, I don't know where we would find funds to do this," she says. ■



photo © PAM BENHAM

Boosting profits. Today, Windes and Brad Brown, UI Extension crop management specialist at Parma, are investigating fertility practices that boost proteins in hard white wheat to the market-rewarding 14 percent level and slow-release, coated nitrogen fertilizers that could reduce application frequency.

Idaho wheat growers are also awaiting results of other UI studies with the potential to improve their bottom lines: among them Windes' seed treatment trials for soil-borne diseases of dryland wheat, Nilsa Bosque-Pérez and plant virologist Alex Karasev's statewide survey of plant viruses capable of attacking wheats, and UI Extension weed scientist Don Morishita's evaluations of new wild oat and broadleaf weed herbicides.

Growers have already benefited from Morishita's studies demonstrating the weed-controlling impacts of lower-rate herbicides, improved stands, and more competitive varieties. For jointed goatgrass—a weed whose similarity to wheat makes it especially difficult to selectively control—CALs' Clearfield wheats are delivering a knock-out punch, he says. "They're so effective that some growers have significantly reduced goatgrass populations."

Economic concerns. In Plummer, former IWC commissioner Sam Tyler says CALs faculty have long responded to growers' economic concerns. "You try to lower your inputs and raise your outputs, and the university has done an excellent job in this, in my estimation."

A study by college agricultural economists identified unacceptably high variability between cash and futures prices when growers cross-hedged white wheat—for which there is no viable futures contract—with classes of wheat that are traded on the futures market. Research by UI's Larry Makus and Paul Patterson documented the

availability of wheat straw residue for such alternative uses as strawboard and ethanol, while other CALs agricultural economists calculated the economic impacts of wheat and barley crops in Idaho.

Has the day come for wheat with biotech traits?

What IWC commissioner Joe Anderson of Potlatch would like to see next is a steep climb in yields.

"Quality is important, but we make money when we have yield," he says. "We have not had a home-run hit in the genetics of wheat yield improvement since we went to Gaines and other semi-dwarf wheats in the 1960s."

Around the world, wheat is competing for acreage with genetically modified corn, soybeans, and cotton, Anderson notes. "When you can grow 200 bushels of GM corn in southern Idaho and on that same land you can grow 80 to 90 bushels of wheat, which one can you grow cheapest on a per-unit basis? You can sell corn for less money and still make a profit on it—just because of yield."

Samson says south Asian buyers have been softening their positions against wheat with biotech traits, particularly in recent years when demand for wheat outstripped production. Now, they're "privately saying if it will reduce prices, if it will increase production, if there's a benefit to consumers, then we would take a better look at it."

Zemetra maintains a small research program in genetic engineering. In the early 1990s, before the marketplace froze out biotech wheat, he was a pioneer in transforming soft white wheats with barley yellow dwarf virus (BYDV) resistance. Now, with signs of the marketplace thawing, Zemetra, Bosque-Pérez, and Karasev are building a nucleic acid sequence from BYDV into the plant so that the plant will recognize and destroy it. ■



6 classes of wheat and 2008 Idaho wheat production

WHEAT IS GROWN IN MOST OF THE 50 STATES, several hundred varieties of it. Wheat improvement work began formally in 1897 when the U.S. Department of Agriculture set up an active program of wheat research and development. Experiment stations from land-grant universities are the primary source of new wheat varieties. They help maintain uniformity within a wheat class. Plant scientists at federal and state stations are guided by needs of farmers for high-yielding wheats that resist drought and disease and by quality requirements of millers and bakers at home and abroad.

CLASS VARIETY is determined by a wheat's hardness, color of the kernels, and planting time. Each of these six classes has its own relatively uniform characteristics related to milling, baking, or other food use.

EXPORTS—Idaho exports about half the wheat it grows to 25 foreign countries. Biggest buyers are Japan, Mexico, the Philippines, South Korea, and Indonesia.



SOFT WHITE WINTER, SPRING, and CLUB No. 1 in Idaho

Description
Grown mainly in the Pacific Northwest. Used in the same way as soft red winter wheat (for bakery products other than bread).

Lower in protein; higher in carbohydrates than hard red wheats

High yields

Accounts for 10-15% of total U.S. wheat production

Uses
Flour for baking cakes, crackers, cookies, pastries, quick breads, muffins, snack food

Acres grown in Idaho: 2008
Spring—184,600
Winter—558,600
Club—15,300
TOTAL: 758,500 acres

Developed at UI/Acres grown in Idaho in 2008
SWS: Alturas93,300
SWS: Brundage156,000
Lambert31,500
Brundage25,700



SOFT RED WINTER Not grown in Idaho

Description
Grown mainly east of the Mississippi

High yielding but relatively low protein

Uses
Flat breads, cakes, pastries, crackers

Acres grown in Idaho: 2008
None

Developed at UI/Acres grown in Idaho in 2008
None



HARD RED SPRING No. 2 in Idaho

Description
Mostly grown in Idaho, Montana, the Dakotas, Minnesota

Contains highest percentage of protein (13-14%)

Superior milling, baking

20% of U.S. wheat exports

Uses
Excellent for bread

Acres grown in Idaho: 2008
254,800

Developed at UI/Acres grown in Idaho in 2008
Jefferson55,700
Jerome5,900



HARD RED WINTER No. 3 in Idaho

Description
Dominant U.S. export and largest class produced each year, mainly in Great Plains states.

Wide range of protein content (average 11-12%)

Good milling, baking characteristics

Uses
Bread, rolls, sweet goods, all-purpose flour

Acres grown in Idaho: 2008
252,200 acres

Developed at UI/Acres grown in Idaho in 2008
Boundary.....40,900
Moreland.....26,700
Bonneville21,300
Weston.....17,200
DW.....9,000



HARD WHITE SPRING, WINTER No. 4 in Idaho

Description
Future of this industry? Newest class of wheat is grown mainly in Idaho, California, Kansas, and Montana.

Closely related to red wheats except for color genes. Has a milder, sweeter flavor, equal fiber, similar milling, baking properties.

Versatile: can be used alone or blended with soft white at the mill to make yeast, flat, and pan breads.

Uses
Asian noodles, bright white noodles, steam breads, yeast breads, hard rolls, bulgur, tortillas

Acres grown in Idaho: 2008
Spring—73,700
USDA report shows no HWW, but IWC reports 4,000 acres were grown in the Burley area in 2008.

Developed at UI/Acres grown in Idaho in 2008
None



DURUM No. 5 in Idaho

Description
Hardest of all U.S. wheat. Grown in same northern states as HRS. 80% of U.S. production is from North Dakota.

Uses
Semolina flour for pasta

Acres grown in Idaho: 2008
23,000

Developed at UI/Acres grown in Idaho in 2008
None

NOTE: Figures in this table come from 2008 Idaho Wheat Varieties, a July 2008 survey by the U.S. Department of Agriculture, available at www.usda.gov. Wheat production totals do not add up to the 1.4 million acres planted in Idaho in 2008 because the survey was made in July, and not all growers responded. The USDA estimated production value of Idaho's 2008 wheat crop at \$646 million. Three of the top six varieties planted are releases by UI wheat breeders—Brundage (11%), Alturas (6.5%), and Jefferson (4%). Photos by KATHERINE O'BRIEN, University of Idaho and KEN CHAMBERLAIN, Ohio State University.



photo by SCOTT BAUER, BUGWOOD.ORG

photo by HOWARD F. SCHWARTZ, BUGWOOD.ORG

Who-done-its?

Researchers unravel mysterious worlds of weeds and global pests

AS WITH VIRTUALLY ALL commercially grown farm crops, unending battles involve weeds that crowd out the food crop and pests that maim and even destroy crops. For University of Idaho wheat scientists and extension educators, these villains never disappear. They only evolve.

Former UI wheat breeder Ed Souza, who now leads the USDA Agricultural Research Service's Soft Wheat Quality Laboratory in Wooster, Ohio, takes pride in the disease resistance of Idaho varieties he developed while working at Aberdeen. "All of them went out the door with solid resistance to dwarf bunt, the winter wheats had good resistance to snow mold, and the stripe rust resistance in Alturas is still good."

Stripe rust & Hessian fly. Several years ago, when an unexpected cascade of new stripe rust races broke resistance in many of the region's wheat varieties—particularly its soft white springs—Moscow-based wheat breeder Robert Zemetra says the UI CALS' statewide field trials proved their merit.

"Because we've had dependable and continuous funding from the Idaho Wheat Commission (IWC) and have always been selecting against stripe rust, we could identify material that will lead to stronger resistance in the future."

In Potlatch, IWC commissioner Joe Anderson calls Hessian fly (photo above) the most significant insect impediment to northern Idaho wheat production. "When we have it, resistant varieties are really the only control mechanism," he says. Using both traditional laboratory screening and molecular markers, Souza, Zemetra, and UI entomologist Nilsa Bosque-Pérez produced the Hessian

fly-resistant varieties Cataldo and Jerome, each of which carries a different gene for resistance. Down the road, they anticipate varieties with multiple or "stacked" resistance.

Bosque-Pérez also surveys fields for Hessian fly and its natural enemies and examines the effects of tillage practices on fly biology. In addition, she compares populations of beneficial carbid beetles in no-till versus conventional crops.

Russian wheat aphid. When the potentially devastating Russian wheat aphid entered Idaho in 1988, IWC support supplemented USDA funding for a multidisciplinary response. Short-term solutions included developing pest-monitoring systems like suction traps and field sampling methods as well as effective insecticidal control. Faculty, staff, and students worked on longer-term sustainable-management strategies, such as developing and introducing biological control agents and identifying germplasm from countries like Iran and Iraq that carried genetic resistance to the Russian wheat aphid. By 1996, the Russian wheat aphid was only a sporadic and localized pest.

Those pesky weeds. Herbicide development was Donn Thill's top priority when he arrived on the Moscow campus in 1980. "The last 50 years have been a remarkable time as far as weed management in wheat," says Thill, now superintendent of the university's Moscow-based Palouse R&E Center. As resistance to herbicides evolve in targeted weeds, he forestalls weed resistance through development of new weed management practices.

Now, he's following a series of educational publications with a computer program, "Herbicide Resistance and Persistence," that guides growers in selecting herbicides least likely to fuel resistance in their crop rotations. And, he has stepped up studies of herbicide-resistant Italian ryegrass, which some northern Idaho growers find can no longer be controlled with currently registered herbicides.

Souza credits Thill's "year-in and year-out evaluations" for Idaho weed management as being "much more sophisticated" than in the eastern U.S. ■



OPPORTUNITY
AHEAD

IDAHO

MOSCOW

YOU ARE
HERE

CASTLEFORD

AGRICULTURAL
SCIENCE & YOU

Credit before college

story by BILL LOFTUS illustrations by NOAH KROESE

SOME 200 IDAHO HIGH SCHOOL STUDENTS EARNED UNIVERSITY OF IDAHO CREDIT WITHOUT LEAVING THEIR OWN SCHOOL ROOMS THIS SPRING, MATCHING ANOTHER 200 STUDENTS WHO COMPLETED UI CREDIT LAST FALL, THANKS TO A PROGRAM COMPLETING ITS FIRST YEAR AND SPONSORED BY THE UI COLLEGE OF AGRICULTURAL AND LIFE SCIENCES (CALs).

"This exceeded my expectations, and I had high expectations going in," said Lou Riesenber, the Agricultural and Extension Education Department professor who coordinated the high school program.

Teachers in 35 Idaho high schools qualified as university affiliate faculty members, permitting them to teach dual credit classes.

Alan Heikkila of Pocatello's Highland High School hoped the new credit option would tip students toward attending college. "A lot of kids get to their senior year, and they're not sure what they're going to do. For some of them these credits could be a deciding factor," Heikkila said.

Not only are students getting credit at the school, but they gain confidence by performing like a university student. "Dual credit is starting to get the ball rolling. It may take awhile to get the mechanics in place," Heikkila said.

CHEAPER CREDITS, A HEAD START ON COLLEGE

The partnership builds on university efforts to increase high school students' access to college credits. The college's program took shape last summer when high school teachers from across the state attended a planning session in Moscow, working through standards and rules with college faculty.

"It's been going very well. The kids seem to be getting into them. The administration's behind it, and the school has been paying for their credits. It's a win-win for everyone down here."

Roger Wells
Castleford High School
agricultural education teacher



The program offers high school students University of Idaho credit for survey courses in animal science, plant science, agricultural economics, and agricultural education. High school students pay \$65 per credit, less than half the fee paid by university students, and could earn 12 credits or more, the equivalent of their first semester on campus.

CASTLEFORD SWEETENS THE DEAL

The Castleford School Board sweetens the deal, paying online and dual credit course fees to encourage high school students to expand their educational horizons.

The result has been an enthusiastic response toward the college's dual credit offerings, said agricultural education teacher Roger Wells. "It's been going very well. The kids seem to be getting into them. The administration's behind it, and the school has been paying for their credits. It's a win-win for everyone down here."

Fifteen of 95 Castleford High School students earned dual credit during the 2008-09 school year.

The college's dual credit program taps into the university's land-grant mission, tasked by law to work with high school teachers statewide through the Idaho Division of Professional and Technical Education.

"Longstanding ties between the university and high school teachers helped make the pioneering project successful," said John Foltz, UI CALS academic programs director.

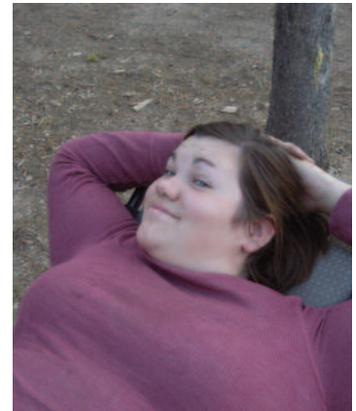
Kyle Stapleton, Nezperce High School's agricultural education teacher, believes that enrollment will grow. "Once these kids understand they can earn college credit for classes they're taking in high school, we'll have more doing it," Stapleton said.

The first year also suggests other partnerships to increase student access to college credits, such as adding an agricultural mechanics class, Heikkila added. Students also qualify for university credit through opportunities with high school FFA activities.

"The University of Idaho is proud to partner with high schools around the state as we work together on providing quality, relevant, and forward-thinking education for our students," said UI President Steven Daley-Laursen. "This is a prime example of how our interdependence truly serves the common good of our state."



"in their own words"



"It's a bit more of a challenge, and that's been fun because I like to challenge myself in what I do."

KRISTEN WARD

Senior
Highland High School
Pocatello

Took a UI CALS agricultural education class. She intends to earn her bachelor's at Brigham Young.

She'll keep her options open after college, preparing to teach agricultural education or at the elementary level.

"It's been really nice because obviously it's a lot more affordable to do this in high school."

"I'm starting my higher education through this class, and it's helping to prepare me for college. It's kind of nice to know what's expected of me in college by doing this."



"The credits I get with it are an extra bonus because it puts me that much ahead with my college education. I want to eventually work toward my master's degree, so I plan to take as many credits as I can along the way."

KATIE MOSMAN

Senior
Nezperce High School
Nez Perce

She took three credits during fall semester, one in agricultural education and one in leadership development, and attended an FFA leadership event in Shanghai, China (photo above).

When she graduates from high school this spring, she expects to have nine University of Idaho credits. Mosman intends to major in agricultural education at the University of Idaho.

"I had always wanted to go to the U of I, and the ag ed classes I took really solidified my decision and made me want to be an ag teacher even more. I've had a ton of fun with the classes I've been involved in."



"I'm getting college credits at a steal. I think it's a great opportunity, and it helps you build your resume."

JAKE ELLIS

Senior
Highland High School
Pocatello

Plans to attend the University of Idaho in the fall to prepare for a career as a history teacher.

He signed up for the university's introductory agricultural education class and served as class aide to agricultural education teacher Alan Heikkila.

"UI has a great agricultural education program. Getting college credits while you're in high school is a great thing to do. I liked the class because it gave us college assignments."



"I think it's going to help me a lot in the future. I'm really looking forward to going to college, and this gives me a college experience ahead of time. It's a lot harder. They expect a more complete explanation in the answers. In college you have to be much more precise."

JESSICA SCHLUND

Junior
Castleford High School
Castleford

Enrolled in the online bridge class to earn credits toward her education degree.

She is considering careers in agricultural education, elementary education, or radiology and may enroll in the University of Idaho, College of Southern Idaho, or Idaho State University.

"I was pretty confident, and I knew that Mr. Wells would help me a lot through it. I'd rather take it now and get a little experience."



"I think it's helped me with what I'm pursuing down the road."

MICHAEL WISEMAN

Junior
Castleford High School
Castleford

Takes classes that stretch beyond his school's curriculum. School board members encourage students to do so by underwriting the cost.

"They do it so we students have more of a variety and hopefully persuade us to go on with our education. I think it's helping a lot because you get to take classes you might not normally take because you couldn't afford them."

His career interests include agriculture and business. *"The leadership class has helped me develop more leadership and more confidence to go out there to help other people and meet new people."*

"The University of Idaho is proud to partner with high schools around the state as we work together on providing quality, relevant, and forward-thinking education for our students."

Steven Daley-Laursen
University of Idaho President

Burma
Bhutan
Burundi
Congo
Togo
Liberia
Uzbekistan
Afghanistan
Iraq
Jamaica
Costa Rica
Mali
Malawi
Tanzania
Kazakhstan
Ukraine
Russia

alums go Global



Editor's Note: It's not unusual for UI College of Agricultural and Life Sciences alums to begin impacting the global stage soon after their graduations, or even during graduate studies. Meet six alums who are doing just that in Africa, Jamaica, and in several former Soviet republics. Also included is a Niger-born UI graduate whose work with refugees seeking a new home in Boise has won him a prestigious humanitarian award.



Leigh Winowiecki '08
Global focus: Costa Rica, Africa

"What makes it exciting is that I can use my skills, deal with those challenges, and see benefits in a relatively short term."

Into Africa: Alum helps Africans understand their soil needs

by MARLENE FRITZ

LEIGH WINOWIECKI '08 (Ph.D., Soil and Land Resources/Tropical Agroforestry) now awakens to African sunrises and to her ever-deepening commitment to worldwide agricultural sustainability.

As a former doctoral student in the UI's joint program with the Costa Rican Tropical Agricultural Research and Higher Education Center (CATIE), Winowiecki cut her teeth in international science by examining nutrient cycling in cacao agroforestry systems (photo above), slash-and-burn agriculture, and local agricultural knowledge of indigenous farmers.

Now, as a postdoctoral researcher with the Earth Institute at Columbia University, she is contributing to the bold launch of a globally integrated Africa Soil Information Service (AfSIS). She conducts needs assessments to establish regional soils labs in Mali, Malawi, and Tanzania and trains local staff in the application of new scientific technologies.

The Web-based digital soil map (www.africasoils.net) that AfSIS is building will enable poverty-alleviating improvements in land management in Sub-Saharan Africa, where 237 million people were chronically hungry in 2007. The effort

is supported by a four-year, \$18 million grant from the Bill & Melinda Gates Foundation and Alliance for a Green Revolution in Africa.

Finding help for overused soils

"The soils here are very diverse and very old, and many have been over-used and stripped of organic matter," Winowiecki says. Productivity drops in response to continuous cropping, overgrazing, deforestation, and erosion from cultivating steep slopes.

With over 80 percent of the Sub-Saharan population dependent directly on agriculture for its livelihood, Winowiecki says there's "a dire need" for soil-sustaining land management strategies. Science-based interventions and effective information dissemination and on-farm research are "the only things that will work."

"It's so enlightening to be here and to talk with African scientists about the future of African agriculture," she says. "It's so important to be on the continent when we come up with ideas, because it means ideas will be more practical."

Her Costa Rican experience as a UI student taught Winowiecki the importance of "taking things slowly," establishing relationships, and defining knowledge gaps in preparation for capacity-building in developing nations. "If you want to introduce a new technique, you need to understand where the knowledge of indigenous farmers came from and provide a dialog," she says.

When she enters an African village

and sees "hard-working, happy, but hungry" people, Winowiecki's thoughts turn quickly to how she can harness her skills on their behalf. "That's really all I can do, because that is all I have to give them. There are a lot of needs in international agriculture. What makes it exciting is that I can use my skills, deal with those challenges, and see benefits in a relatively short term." ■

CALS alum reviews Abu Ghraib cases

by ANDREA VOGT

IT WAS A VOLLEYBALL GAME, so the sight of someone diving for the sand wouldn't normally cause concern. But this was no everyday beach volleyball tournament. It was an impromptu match convened by several paralegals and military lawyers, including **Capt. Airon Shuler Mothershed '98, '01**, just outside their office in the heavily fortified U.S. Embassy in Baghdad's Green Zone.

"We'd had a long time of no mortar, and so we were outside playing volleyball. I mean you want life to go on, and you have to do something to keep yourself from going crazy," Mothershed recalls. Then they heard the telltale whistle of an incoming rocket sail overhead. "There we were, an 11-member volleyball team ... all diving for a nearby concrete bunker and pulling each other inside. It hit, about a block away."



Airon Mothershed '98, '01
Global focus: Iraq, Pentagon, WA D.C.
"Abu Ghraib was such a horrible thing. We all wanted to make it better."

Capt. Mothershed, 32, is a member of the Air Force Judge Advocate General Corps—an attorney whose role prosecuting, defending, and mediating legal cases inside the military was made famous by the television series named after the profession's acronym—JAG.

The Soda Springs, Idaho, native was a fan of the TV show growing up. After graduating from the UI in agricultural economics in 1998, she went on to attend the UI College of Law, graduating in May 2001. Events a few months later on September 11, 2001, ignited a "patriotic fervor" that committed her to the JAG Corps program she had been considering.

By fall 2002 she was assigned to Little Rock Air Force Base, Arkansas, and then three years later, to Eilson Air Force Base near Fairbanks, Alaska. There, in spring 2007 she and her husband Zachary got word that she would deploy shortly to Iraq. The obvious questions came up. "Will this be my last summer vacation? Will I make it home safe? Will my husband survive in Alaska without me?"

Helping Abu Ghraib victims

Her Alaska JAG colleagues promised to keep her husband busy with hockey games and dinner invitations. In August 2007, she joined more than 100 military attorneys and paralegals—mostly from the Navy and Air Force—deployed to Iraq to work for

Task Force 134, charged with detainee command and control and establishing Iraq's judicial, correctional, and law enforcement system.

Just two years before, seven soldiers had been court-martialed and sent to prison for torture and prisoner abuse in Baghdad's Abu Ghraib prison. Mothershed did not take the charge of protecting detainees' rights lightly. "Abu Ghraib was such a horrible thing," Mothershed said "We all wanted to make it better."

Her specific role was to facilitate a review board that managed the "iffy detainees," those who had been confined 18 to 36 months whose cases merited a closer look. Along with another attorney, Mothershed organized each detainee's file, and then decided which cases would be presented first to the board.

Each board was composed of at least three American military officers at the rank of O-5 and above and three high-ranking Iraqi government officials. "A lot of times the cases were not clear cut. The Iraqis picked things up—sometimes they would say this person is from this tribal family, but the neighbor who ratted on him was from a different tribe that hated his tribe, so he needs to be released."

Eventual recommendations had to be vetted and accepted by higher ups with access to classified intelligence.

Security was also a priority—JAGs worked hard to protect identities of Iraqis working with them—never, for example, posting their names, pictures, or other information on Facebook, blogs, or photo-sharing sites for friends and family at home.

While most of her detainees remained confined, some were released. And there have been new changes to the process—boards today don't just review the paperwork but also hear detainees' cases in person.

"I think it was as fair as it could be under the circumstances," said Mothershed. "We were merging two systems. The situation is a lot harder than anybody realizes." While work was more challenging than expected, her living conditions pleasantly exceeded her expectations. She shared a trailer with another female military officer, with modern plumbing, running water, and a Kevlar vest and helmet in arm's reach for terrifying moments of mortar/rocket fire.

Most workdays went from 8 a.m. to 9 p.m., with hour-long breaks for gym time and meals. She enjoyed one memorable week of R & R in neighboring Qatar, where she and friends hit the beach, took an inland sea cruise and an SUV trip through the desert that ended with an Arabic meal cooked by a Qatari tour company. She befriended several female Arabic linguists (mostly U.S. nation-

als of Lebanese origin) with whom she celebrated the end of Ramadan at festivities held at the U.S. Embassy.

Fighting work discrimination at the Pentagon in Washington D.C.

By February 2008, Mothershed reunited with her husband, and the two moved to Washington D.C., where she works as a litigation attorney defending the U.S. Air Force against employment discrimination suits based on race, gender, reprisals, or hostile work environment.

Once again she finds herself transforming a system—this in her own country. “We try to solve cases whenever possible outside of court, and in that task, I am an advisor, so I can’t make anybody do anything, which is frustrating,” Mothershed noted. “Other times we make a real difference by sharing possible solutions. In one racial discrimination case, the guy had valid reasons for filing the complaint. When we finally got management on board, we completely transform their workplace.” ■

Stephanie Greene: Scientifically in clover in the former Soviet Union

by MARLENE FRITZ

SHE’S TASTED SHEEP’S EARS and fermented camel’s milk in Kazakhstan, scrutinized centuries-old

herbarium records in Ukraine, and sent e-mail from a trendy Internet café in St. Petersburg, Russia.

As a geneticist and curator for the USDA Agricultural Research Service in Prosser, Wash., **Stephanie Greene ’88** (M.S., Plant Science) banks the seed of 15,000 wild and cultivated alfalfas and clovers. Because the former Soviet Union (FSU) is a center of diversity for these globally essential crops, Greene has been combing pastures and hillsides in this part of the world to fill gaps in the U.S. forage legume collection.

Not only are alfalfa and clover crucial to livestock, but they add nitrogen to soils, prevent erosion, and feed wildlife. Increasingly, they’re also being investigated for their biofuel, nutraceutical, and bioremediation potential. In Europe, geneticists are working towards forages with smaller environmental footprints—plants that deliver nutrients to livestock more efficiently and leave fewer undesirable components—like nitrogen—in animal wastes.

“Every day when I go to work I feel that I’m doing something worthwhile,” says Greene, who earned her Ph.D. in plant science at Kansas State University. “Genetic diversity is really our only source of plant traits. We don’t know what we’ll be up against in the future, and more and more we’ll be going to these germplasm collections to mitigate the effects of global climate change.”

Building an agricultural atlas to help growers in FSU republics

Greene is the only American among 65 scientists building an interactive geographic information system-based agricultural atlas for the former Soviet republics. They’ve developed the most up-to-date maps on climate, soils, historical cropping patterns, and ranges of weeds, insects, and diseases. They plan to train other FSU scientists in the use of the Agro Atlas (www.agroatlas.ru).

It will guide scientists, policymakers, farmers, students, and extension professionals in making decisions about what to plant where.

In Soviet times, crop production was assigned centrally, Greene says. For example, Kazakhstan was the nation’s bread basket and Ukraine its grape vineyard. “Since the breakup, all these independent countries are responsible for providing food for their citizens, so now there’s a huge need to diversify agriculture and find out what will grow best in each country.

“There’s a lot of research that has a global context, and if you don’t have overseas connections, you’re really missing a lot. Networking internationally can make you a much better scientist. That’s how progress happens—by collaboration,” she says.

Bonding over cups of tea

“Scientists can always bond because they’re usually pretty enthusiastic about what they do,” Greene says,



Stephanie Greene, second from left, enjoys tea with Russian scientists.



Stephanie Greene '88
Global focus: Kazakhstan,
Ukraine, Russia

"After the breakup, all these independent countries became responsible for providing food for their citizens, so now there's a huge need to diversify agriculture and find out what will grow best in each country."



Andrea and Will Schumaker '08
Global focus: Jamaica

"To my amazement they [Jamaican primary school children] are not only taking care of the garden, but they also planted about 10 rows of black-eyed peas!"



"and everybody recognizes the importance of the project." In Russia, much of that bonding takes place over "great tea breaks"—brown, green, and even Lipton. ■

Peace Corps honeymoon in Jamaica: Lots to give, lots to learn

by ANDREA VOGT

WHEN WILL AND ANDREA FARNER SCHUMAKER '08 were accepted into the Peace Corps, the newlyweds didn't expect life in rural Jamaica to be a Caribbean honeymoon. They imagined the difficulty of digging ditches to bring water to rural communities and toiling in fields teaching green agricultural techniques.

"Looking back we had no idea," laughs Andrea, 22. She and Will, 23, met in high school through the National FFA Organization, she from Melba, he from Meridian. Both attended the University of Idaho and married during their junior year.

After graduating in 2008 with bachelor's degrees in agricultural education, the couple set off for two years of Peace Corps service in Jamaica—a plan whose lofty ideals were soon replaced by harsh realities of a paradoxical country—extreme poverty in some villages, awash in tourist money in others, "on the cusp of being great and falling apart at the same time," explains Will.

Both are agricultural extension

agents for Jamaica's Rural Agricultural Development Authority (RADA), modeled after the U.S. Cooperative Extension Service. They help local growers improve crops such as peppers. Andrea also develops 4-H projects and helps women with skills like composting.

One year into their two-year program, basic challenges of water, equipment, and training have proven easier to overcome than cultural and sociological barriers like age, race, and class.

If you're too young, too white ...

"We are so young it has been hard for people to take us seriously," says Andrea. "They believe you have to be older to have wisdom and knowledge, and somehow we get lumped in together with kids age 1 to 20."

Beyond that is skepticism because they are white—the only whites in their community, other than an LDS missionary who lives a few villages away. Back in homogeneous Idaho, opportunities to test their own prejudices were rare.

"It definitely gives you more compassion when you realize what it is like to be a minority," says Will. "I always thought I was color blind, but being in Jamaica has made me much more aware of differences in race."

Curious stares from children and even occasional taunts are not so much malicious as a result of the country's deep and painful history of race relations, namely white exploitation of blacks. Still, for every "Hey, Whitey" they've gotten on the street

there's been another Jamaican whose generosity speaks even more loudly.

While their first home lacked some comforts (Andrea hand-washed their laundry for weeks), their current home has modern appliances, thanks to a Jamaican woman who found the place and often shares her dinner with the couple. One taxi driver insisted on fording a swollen river to get the two to a destination. And the November 2008 election of Barack Obama has given them a sure topic. "Every time we get into a taxi people want to talk about Obama. Quite a few places have changed their name, for example, Obama's Fish Shack," notes Andrea.

Their own hopes and goals are now tempered with a big dose of patience and a new perspective on what defines "progress."

Stepping into the digital divide

The digital divide has helped the couple find their niche. Their computer skills ("average by U.S. standards") give them almost expert status in Jamaica. While they Skype, blog, and e-mail friends and family from their Jamaican home, at work they find themselves teaching colleagues basics such as how to attach a digital photo in an e-mail.

When the country's agricultural ministry heard it may get 400 desktop computers, Will was immediately tapped to help with basic computer training. His project—teaching extension officers how to track and tabulate crop production using an

Excel spreadsheet program—is being met with success. Until now, all crop production tallies were input by hand. Computerization is expected to vastly improve accuracy and efficiency.

A garden for primary school kids

Andrea, meanwhile, has begun an environmental club at a primary school where she initiated a school garden. She helped students till the ground with pitchforks “until blisters sprouted” and planted cucumber, corn, cabbage, lettuce, and other local favorites.

“Last week I went back to see how the kids were doing,” she writes on their blog (<http://andreaandwill.blogspot.com>). “To my amazement they are not only taking care of the garden, but they also planted about 10 rows of black-eyed peas!” Now she’s stirring interest with several unemployed women who have goats and may form a cooperative to make goat’s milk soap—a skill Andrea honed on her family’s Melba farm.

Perhaps the biggest sign that the couple is being accepted is that local farmers have started asking for the Schumakers to provide training—mostly about computerized record keeping and biological pest control.

“It has taken us a long time to gain that trust, but we’ve learned there is a balance. We are also interested in learning how they do things. We give them a lot of respect.” ■

Rabiou Manzo: Boise’s kind man for unkind times

by MARLENE FRITZ

INTERNATIONAL CLIENTS that **Rabiou Manzo '03** (M.S., Animal Science) greets at the Boise airport aren’t here for business meetings. Numbering several hundred annually, they’re fleeing violent conflict and religious, ethnic, and political persecution in some of the world’s most dangerous places—primarily Iraq, Burma, and Bhutan but also Burundi, Congo, Togo, Liberia, Uzbekistan, and Afghanistan.

As a U.S. program specialist for the International Rescue Committee’s (IRC) Boise regional office, Manzo connects his refugee clients with available assistance programs, matches them with landlords, arranges medical appointments and English instruction, helps children start school and parents find work, and guides and encourages the families’ transitions to a new world and renewed lives. Within eight months, they’re expected to be self-sufficient.

“Once I see them working, paying their bills, buying houses, and navigating the U.S. system to the point that they can give back to the community, I can call it success,” says Manzo. In the meantime, he’s “patient—very, very patient.”

A father of two whose wife is fellow graduate student Juanita Sosa Manzo, he grew up in Niger, speaks five languages, and earned a veterinary science degree in Ukraine before his own 2000 arrival at the UI.

He was herdsman for a 2,500-cow Treasure Valley dairy when his volunteer Russian-translation efforts for the local World Relief office brought his talents to the attention of Leslye Moore. Now Manzo’s boss, Moore successfully nominated him last year for the IRC’s Sarlo Foundation Distinguished Humanitarian Service Award—one of five granted annually worldwide. “Rabiou has been exceptional at developing resources in the community,” Moore says. “Generosity, humor, and service define him.”

The economic upheaval that has shaken Americans is challenging his clients as well. “A year ago it was easy to place them in factories, grocery stores, hospitals, restaurants, and cleaning jobs, but it’s more difficult now,” says Manzo. So he’s using his familiarity with agriculture to place them on dairy farms as far away as Boardman, Oregon.

Amin Ahmadzadeh helped and mentored Manzo as he initially tiptoed, then strode, through his CALS Animal and Veterinary Science graduate program.

“My philosophy is to have faith and everything will work out,” says Manzo. “Nothing comes true the first time. It’s step by step.” ■



Rabiou Manzo '03 (on right)
Global focus: Worldwide, Boise

“My philosophy is to have faith and everything will work out. Nothing comes true the first time. It’s step by step.”





VICTORY GARDENS—Vegetable, fruit, and herb gardens planted at private residences in the United States, United Kingdom, Canada, and Germany during World War I and World War II to reduce pressure on the public food supply brought on by the war effort. Such gardens indirectly aided the war effort and were also considered a civil “morale booster”—part of daily life on the home front. Now—victory over the recession.

6 Tips for great Victory Gardens

illustrations by NOAH KROESE
tips by ARIEL AGENBROAD

1 Start

with a garden plan. What do you like to eat? How much time will you spend cooking or preparing produce? Will you be freezing, drying, or canning? How much space/time/money can you devote? Design accordingly.

2 Choose

seeds and plants wisely. Read variety descriptions carefully and make decisions based on how well a crop will perform, not just how it looks on the packet or catalog! How much space will this variety require? How many days from planting to harvest? Will it resist diseases or pests? Careful selection now can mean better performance later.

3 Landscape

with edibles. Crabapple, plum, and mulberry trees are ornamental while providing tasty fruit. Same goes for shrubs like currant, sand cherry, and quince. Herbs are another excellent choice, adding color and fragrance in the landscape and flavor in the kitchen.

Victory Gardens make a comeback

by MARLENE FRITZ

MONTHS BEFORE Michele Obama turned her first pitchfork of soil on the White House lawn, sisters Dawn Larsen and Jodi Solomon signed up for the six-week Idaho Victory Garden series so their four-generation family can one day be self-sufficient at its eastern Oregon cabin. This year, they'll start with a healthy-sized backyard garden at their Nampa home, rototilled by dad and relished by grandkids.

Fred Mould registered in part because he was intrigued by the class name. At 72, the New England transplant recalls the real deal. "The day may come when, if you want to eat it, you have to grow it," he says. "A small backyard garden gives you a start."

Laura Johnson enrolled because she is finally "planted" in a Nampa subdivision and able to get serious about gardening. A creative and determined recycler, she sowed this season's seeds in sliced-up toilet paper rolls—a response to instructor Ariel Agenbroad's challenge to keep her costs low.

With hundreds of names on gardening education waiting lists and high volumes of calls about home-grown foods, Canyon County's UI Extension educator offered the class to 51 Treasure Valley residents this spring in the College of Western Idaho's largest available classroom. Interest in Victory Gardens was ignited during World War I and fueled again during World War II by millions of patriotic citizens motivated to reduce the pressure on the public food supply.

What qualifies as a Victory Garden?

"With so many people out of work, worried about money or food-safety issues, I thought growing your own would

be huge this year," Agenbroad says. "And I thought, why can't we do Victory Gardens again?"

To Agenbroad, everything from a pot of herbs to "ripping out your entire front yard and planting it all to vegetables" qualifies as a Victory Garden. She advises her students to match their fruit and veggie plantings to their appetites. While beginner's crops might include carrots, radishes, bush beans, and "determinate" tomatoes that don't need staking, Agenbroad says it "doesn't matter how well radishes grow here if you don't enjoy them."

As her students learned about seed-starting, season extenders, composts, mulches, drip irrigation, pest management, food preservation, edible landscaping, and other topics, Agenbroad noticed "a really positive vibe in the class. There's excitement. I see them whisper to their spouse or friend. They come in with questions and then continually come up with new ones."

Noting that "experience is the best teacher," Agenbroad hopes that arming her students with "some new tools and some new confidence" will encourage them to "grow at least some of their own food and get the satisfaction that comes from that and from sharing the food they've grown with their family and friends."

Penny pinchers who monitor every input, recycle their garden supplies, and make their own compost can save money gardening, Agenbroad says. "You can't do it the first year when you're buying tools, but you can the second year." Still, she says, "I think the real value is that your food is fresher, it's of higher quality, you know where it's coming from, and you get to choose which varieties you want to grow and eat."

Agenbroad co-taught the course with Ron Galloway, Canyon County's Master Gardener coordinator, and with invited University of Idaho Extension faculty and community members.

4 *Involve*

children. Introduce young people in your life to the magic of the garden, and encourage them to participate in everyday tasks. Cultivate their curiosity and develop a lifelong love of gardening.

For more gardening tips visit Agenbroad's Web site at <http://extension.ag.uidaho.edu/canyon/horticulture>.

Visit www.extension.uidaho.edu/idahogardens, or order/download "Planning an Idaho Vegetable Garden," "Harvesting and Storing Fresh Garden Vegetables," and "Composting at Home" by searching UI CALS publications at www.info.ag.uidaho.edu or calling 208.885.7982.

5 *Manage*

pests through prevention. Reduce losses by rotating your crops, choosing disease-resistant varieties, removing weeds, and providing plants with the sun, water, and nutrients they need to stay healthy.

6 *Safety*

first when preserving at home. Use modern recipes. Use a boiling water canner to process jams, jellies, fruit, and pickles. Use pressure canners for vegetables, meats, and fish. Adjust processing times for your altitude. When in doubt, contact a UI Extension Food Safety Advisor.





Stretching

family food dollars

story by MARLENE FRITZ



WHEN GROCERY BUDGETS are tight, low-income families are wise to stretch their scarce dollars across foods that are dense in nutrition. Even before the current economic crisis, Idaho ranked 37th among states in food security, with an estimated 66,300 families worried that their incomes won't cover their groceries.

UI Extension Family and Consumer Sciences educators Rhea Lanting, Laura Sant, and Marnie Spencer offer the following suggestions to help Idaho families stretch their food dollars.

Plan ahead. It's the most important step in saving money on food. This means plan meals: make a menu, write a grocery list based on that menu, and stick to the list while shopping. Some people plan a weekly menu based on food on sale that week. Others plan a 2-week menu because they are paid every 2 weeks. Others make a 1-month or even 2-month menu.

Buy ingredients for one or two super quick meals for days when the original plan doesn't work out (chili and a salad; soup to which you can add vegetables). A family can cook a quick meal and have it on the table in a shorter time than driving to a fast-food restaurant. That can be cheaper and more nutritious.

Use these tips to minimize impulse buys.

Contact Rhea Lanting at rhlanting@uidaho.edu, Laura Sant at lsant@uidaho.edu, and Marnie Spencer at marnies@uidaho.edu.

SHOPPING TIPS

Shop weekly ads for bargains. Stock up on foods you prefer as your budget allows. Basing menus around food on sale that week can save money. Or, if you have a standard menu that you cycle through, buy items for meals when they are on sale.

Use coupons/compare prices. Clip coupons for items you use regularly, especially family favorites. But know that a store brand item is sometimes less expensive than a name brand item with a coupon. Larger is not always less expensive per unit (ounce, cup, etc.) than a small or medium package. Write down prices of food items at various stores to determine if a "sale price" saves money.

Shop alone to decrease impulse purchases. If you shop with children, take one child at a time. Use the trip as a teaching opportunity. Giving young children a choice of two acceptable items can empower them. "Should we buy red grapes or green grapes today?"

Learn the store's layout to find foods quickly. This helps avoid cruising store aisles and impulse buys.

Shop less often. Shop only once a week for food. More trips may mean more impulse purchases.

OTHER TIPS

Avoid waste. The most expensive food you buy is what you throw away. Only buy quantities you will use before food spoils, or freeze leftovers for future meals.

Drink tap water. Bottled water, sodas, and sugary drinks pinch your budget and add no nutritional value.

Eat healthier. Reduce portion sizes and cut down on foods that add calories but little nutritional value to save money and improve health.

Take your lunch. Use leftovers for meals at work, school, or wherever you go. Freezer packs keep food safe if you don't have access to a refrigerator.

Commit to enjoy eating together. Cooking, eating, and talking can bring out the best in families. Use conversation starters such as: What foods would you like to help cook for dinner? What kinds of foods do you like to eat for breakfast, lunch, or dinner? What are your favorite foods in the meals we make at home? What other foods or recipes would you like to try? Mealtimes are wonderful places to build strong relationships, a sense of pride and accomplishment, and memories for a lifetime.

class notes

2000s



ERIK KRIWOX '03 and **AMANDA MOORE-KRIWOX '02**, Jerome, welcomed a baby boy, Eli John, on March 12, 2009. He is held by sister Hannah.

HEIDI MARTIN '03, '08, Boise, is the dietician and coordinator of Child Nutrition Programs for the Idaho Department of Education.

MEGHAN MCCABE '08, Bigfork, MT, is working as a proof operator for Flathead Bank.

MARK '03, '05 and **KATIE VAN ELDEREN '03**, have moved to Meridian where Mark accepted a position with Crop Production Services, a company providing agricultural inputs for specific crop markets. Mark is responsible for western region sales, travelling from the Washington coast to eastern Montana. Katie is employed with Farm Service Agency.



KODY '00 and **MONICA YOUREE '01**, Jerome, welcomed baby girl, Macie Layne, on October 10, 2008. Kody is farming in Kimberly and

Monica is the assistant vice president and branch manager of Magic Valley Bank in Twin Falls.

1990s

WILLIAM BELL '96, Vancouver, WA, is feed division manager and president of Bellwether Trading Company.

BRIAN PARKS '91, Twin Falls, is vice president of Agribusiness Credit Management for Northwest Farm Credit Services in Twin Falls.

THANK YOU to all alumni who returned their alumni updates by March 31, 2009. William Bell will receive a CALS travel mug. Everyone else will be sent a CALS luggage tag.

1990s



TIMOTHY MICHAEL TILLMAN '99 and **MELISSA RAE TILLMAN '95**, Lynchburg, VA, and their daughter "E.J.," Elizabeth Joy, moved to

Lynchburg. Tim was hired as a CFI helicopter instructor at Liberty University and will direct the Rotor Flight Program while Melissa is enjoying being a stay-at-home mom and running a small business selling flower girl dresses called "Tillman's Treasures."

ALLISON TOUCHSTONE '95, '97, Boise, began a new stage in her career as senior instructor with the Department of Agricultural and Extension Education at the University of Idaho in October. Allison continued as the State Program Manager for Agriculture and Natural Resources until April, when she began her duties at UI full time.

1980s

SCOTT BREEDING '80, Hazelton, is the president of the Idaho Water Users Association. Scott and his wife, Diana, farm in Hazelton and Milner, growing a variety of crops including beans and wheat.

TIMOTHY HERRMAN '83, '84, '92, College Station, TX, is the Texas State chemist and director, providing regulatory oversight for the Texas feed and fertilizer industry with annual product sales exceeding 19 million tons and a market value of \$6 billion dollars. Herrman is also a professor in the Department of Soil and Crops Sciences at Texas A & M University, leading a research and education program in feed and grain science.

IN MEMORIAM

Shirley Kiehn
Pullman, April 5, 2008

Doris McGinty '39
Springfield, OR, February 23, 2009

Richard Ross
Moscow/Mission Viejo, CA, March 2, 2009

Rosa Smith '82
New Plymouth, January 22, 2009

Marilyn Sweeney '54
Lewiston, January 27, 2009

Peter K. Wilson '51
Lapwai, March 30, 2009

1980s

PERFECTO SAEZ '84, Venezuela, began his own agribusiness, Distribuidora Saez Y Jaume, after working for Bayer of Venezuela in the veterinary department. As the president, Saez oversees the distribution of animal supplies.

1970s

ARTHUR ANTONELLI '74, Puyallup, WA, has worked for Washington State University Extension as an entomologist in Puyallup for the last 30 years and is nearing retirement.

LYN C. MERRICK '69, '73, Eagle, CO, is training commercial drivers, testing their capabilities, and presenting defensive driving classes for the town of Avon's Transportation Department.

JOHN NALIVKA '76, Ontario, OR, is president of Sterling Marketing, an agribusiness in Vale, OR, serving clients nationally and internationally. John is also co-founder of Sterling Solutions, another agribusiness serving the agricultural industry in the Pacific Northwest.

DAN A. RIGGERS '75, Wenatchee, WA, received the 2008 Unsung Hero Award from the Wenatchee Apollo Club for volunteer service. The Apollo Club is a group of 60 men who have sung in the Wenatchee area for the past 98 years. Dan, in the club a dozen years, serves as secretary.

1950s

JOHN BROCKERT '58, Salt Lake City, entered a career in public health with his master's in dairy science. In 1996 he retired from the Utah Department of Public Health.

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES
**ALUMNI & FRIENDS ASSOCIATION
 BOARD OF DIRECTORS**

- ASHLEY CARLON '06, Moscow
- DONALD INGLE '58, '68, Kendrick
- KRISTI OVERFELT '07, Moscow
- REBECCA BEAVERS '04, Melba
- THERESA GOLIS '87, '06, Boise, President
- TRAVIS JONES '99, '02, Boise
- BRENT ROWLAND '99, Twin Falls
- TARA ROWLAND '00, Twin Falls
- JASON TINDALL '97, '98, Wilder, President-elect
- JANNA VOLKERS '99, '08, Nampa
- DONNA GILLESPIE '75, '78, Rupert, President-elect
- KRISTA HUETTIG '02, Hazelton
- GRACE WITTMAN '02, '04, Burley
- ALAN HEIKKILA '86, '87, '97, Chubbuck
- NICK USABEL '07, Jordan Valley, OR
- BARBARA WILLIAMS, UI Department of Biological & Agricultural Engineering
- AMELIA NAHER, CALS Student Affairs President
- KEN HART '92, Nezperce
- KATHEE TIFFT '88, '01, Lewiston

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 208.885.6446 or send an e-mail to CALSAlumni@uidaho.edu.



COLLEGE OF AGRICULTURAL AND LIFE SCIENCES

Summer - Fall 2009 Events Calendar

For event information call 208.885.4038 or e-mail knelson@uidaho.edu

JUNE 2009

- 1-10 Vandal Voyageurs, Danube River and Habsburg Empire
- 3-4 UI Alumni Event in Seattle (includes Mariners Game)
- 6 Annual Vandal Picnic in Boise – Ann Morrison Park 5-9 pm
- 9 Beginning of 4-8 week Summer Session
- 15-25, Vandal Voyageurs, The Great Journey Through Europe
- 25 Bay Area Wine Event
- 26-28 Idaho Theta Tau Tri Delt 80th Reunion, Moscow

JULY 2009

- 1-Aug. 8 Idaho Repertory Theatre – Farce, Chaps, Some Enchanted, HS Musical, and Romeo & Juliet
- 3 Independence Day, UI closed
- 23 Vandal Scholarship Fund 2009 Governor's Gala – Boise/Treasure Valley
- 25 Colorado Rockies Baseball Event

AUGUST 2009

- 13 Vandal Night with the Boise Hawks, Boise
- 22 Summer Session ends
- 25 Fall Semester Classes begin

SEPTEMBER 2009

- 5 Vandal Football at New Mexico State
- 7 Labor Day, UI closed
- 9-12 Vandal Pride Days in Seattle
- 12 Vandal Football at University of Washington
- 13-18 Vandal Voyageurs – Italy's Lake Garda and the French Alps
- 19 Vandal Football vs. San Diego State (HOME)
- 19-27 Vandal Voyageurs – Enchanting Ireland
- 26 Vandal Football at Northern Illinois
- 26-Oct 4 Vandal Voyageurs – Village Life in the Italian Lake District

OCTOBER 2009

- 2-4 AG DAYS & Dad's Weekend
- 3 Vandal Football vs. Colorado State (HOME)
- 10 Vandal Football at San Jose State
- 17 Vandal Football vs. Hawaii (HOME)
- 24 Vandal Football at Nevada
- 31 Vandal Football vs. LA Tech (HOME)

NOVEMBER 2009

- 7 Vandal Football vs. Fresno State (HOME)
- 14 Vandal Football at Boise State
- 26-26 Thanksgiving, UI closed
- 28 Vandal Football vs. Utah State (HOME)



Why Thiessens are contributing nearly \$1 million to UI CALS and 4-H

SINCE 1970 WAYNE AND PEGGY THIESSSEN (say it Thee-son) of Boise have either donated or committed a total \$950,000 to the University of Idaho College of Agricultural and Life Sciences, including \$75,000 to UI Extension 4-H Youth Development, an organization that impacted both of their lives.

The two Idaho farm kids first met as high-schoolers at a regional 4-H event in Portland. Four years later they began a lifelong romance as students at a University of Idaho nickel-a-dance mixer.

"I remember you," Peggy Roper told Wayne after he paid his nickel to dance with her as young men cycled through women's living groups in the university's 1950s style get-acquainted ritual. "You were the guy with the cutest lamb at the Pacific International Livestock Exposition in Portland," she remembered. Within three years they had married.

At that exposition, Wayne's "cutest" lamb, the offspring of a ewe from a UI sheep herd, became the reserve grand champion. "The UI raised good sheep," recalls Thiessen. Its sale contributed to Wayne's college fund.

"We had a lot in common because of our 4-H and farming backgrounds," says Peggy. But their farming experiences also reflect huge style differences within Idaho agriculture. Wayne grew up on his family's wheat ranch, which they still own near Lewiston. It was homesteaded by his grandfather before Idaho became a state. Peggy's experience was more labor intensive. One of six children of a Canyon County

Wayne L. Thiessen '62 (B.S. General Agriculture); '65 (M.S. Soil Science) and **Peggy J. Thiessen '65** (B.S. Education—Social Sciences, Home Economics).

GIFTS TO UI CALS AND 4-H

- **Wayne L. Thiessen Soil Science Scholarship Endowment:** \$25,000 funds scholarships for UI soil science majors.
- **Wayne & Peggy Thiessen Idaho State 4-H Endowment:** \$75,000, including matching funds from the H.J. Heinz Foundation, honors Peggy's mother Doris Roper and Wayne's father John Thiessen for their 4-H leadership roles.
- **Niccolls building renovation:** \$46,000-plus for renovating CALS' School of Family and Consumer Sciences building.
- **Wayne L. and Peggy J. Thiessen Endowment:** \$750,000 will be funded by a life-insurance policy.

sharecropper, she recalls spending summers hoeing corn and beans and detasseling corn. "I can't say I miss that hard work," she said in a telephone interview.

One of their three children got a UI degree—Karen got a law degree. All three are translating MBA degrees into impressive careers: Michael, a consultant in Chicago for new sports facilities; Todd, a New York-based dot.com consultant; and Karen, practicing law in Dallas.

Ore-Ida leadership role & UI research

Shortly after H.J. Heinz bought Ore-Ida Foods in 1965, the company hired Wayne, who became general manager in both agriculture and procurement. During his 22-year career, the company's frozen potato products dominated the market. Thiessen worked "extensively" with the University of Idaho's potato and potato storage researchers, whom he considers "among the best in the nation."

Since retiring in 1995, Thiessen served as chairman of the Idaho Food Quality Assurance Institute and as a respected member of Food Producers of Idaho.

Thiessen helped found the CALS Alumni & Friends Association and supports many college and university efforts.

In 2002 he was inducted to the Idaho 4-H Hall of Fame, after leading the 4-H Endowment Board and helping run a \$1 million endowment campaign.

Why support the UI?

Both Wayne and Peggy see their University of Idaho support as "paying forward" benefits they've enjoyed. "I think paying it forward is an important part of being a good citizen," Peggy said. "I was fortunate to go to college, the first in my family. I attribute that to my 4-H activity and mentors who guided me."

Wayne agrees. "Others helped pay for our educations. As state and federal funding to the UI decline, it is incumbent on alums as beneficiaries of the university to step up and fill that gap."

2009 CALS Alumni Awards

Please join us in congratulating the 2009 CALS Alumni and Friends Award recipients for their outstanding service to the college, Idaho, and their professions. Awards are sponsored by the CALS Alumni and Friends Association Board of Directors. Find information about the annual awards at www.cals.uidaho.edu or contact CALS Alumni Director Kim Nelson at 208.885.4038.

DISTINGUISHED ASSOCIATE

Rick Phillips, Boise, manager of public relations for the J.R. Simplot Company, works with government representatives, communities, and the public to protect the reputation and integrity of his company. He has played a major role in Pocatello's Simplot Games and helps sponsor the Food Producers of Idaho Agriculture Pavilion at two Idaho fairs each year. While employed with the Idaho State Department of Agriculture, he initiated Leadership Idaho Agriculture and Agriculture in the Classroom programs. He has served on councils, commissions, and boards and is a true advocate for agriculture.

ALUMNI ACHIEVEMENT

Joe Blackstock '87, '93, Kuna, an agricultural instructor since 1987, taught first at Rimrock High School and now at Kuna High School. During 20 years of teaching, he has been the FFA advisor, training numerous FFA teams to participate in career development events at the national level, including the 2008 National Farm Business Management Team. He has received the honorary State FFA Degree, Norco Inspirational Teacher Award, State Mentor Teacher of the Year, and Farm Business Management Fellowship.

Joey Peutz '92, '95, Caldwell, first taught Family and Consumer Science courses to high school students. In 1999, she became a UI Extension educator, working with families in food safety, nutrition/health, and the 4-H youth development program. In the last five years, she has given more than 700 presentations and trained 723 youth in food service and safety: 65% received their Idaho Safe Food Handler Certificate. Peutz taught more than 15,000 youth and adults to correctly wash hands through the nationally



photo by JOE PALLEEN, UI CREATIVE SERVICES

Ashley Carlson, animal science master's student representing the college's alumni and friends board, presents CALS awards to (from left) Paul Patterson, Joe Blackstock, John Mundt, and Walt Butcher.

recognized "Germ City," a program she shared at Boise's 2009 Special Olympics World Winter Games. Peutz obtained more than \$1 million in grants to support her programs.

Lori Wahl '93, Portland, OR, used her degree in Clothing, Textiles, and Design to progress into a career current students dream about. Wahl designed active sportswear for Adidas, including the 2000 U.S. Olympic gymnastics competition wear. She has designed for private labels such as Hanna Andersson and is now a freelance designer for clients including Asics, Adidas, Cool Sets, and Royal Robbins. She gives back to Idaho by serving on the Family and Consumer Sciences Advisory Board, guest lecturing, visiting design classes, sharing her portfolio, and advising current students.

DISTINGUISHED ALUMNI

Walt Butcher '55, Pullman, WA, earned additional degrees at Iowa State University and pursued a career in agricultural economics with the USDA. He transitioned to teaching and retired as a professor and ag economist from Washington State University in 1997. While his professional career is outstanding, Butcher also is dedicated to making the world a better place. Upon retirement, he committed to a major economic development project in Uzbekistan and helped start the college's AERS Alumni Scholarship.

John Mundt '67, '73, '89, Meridian, began his Agricultural Education career as a high school agriculture instructor and FFA advisor in Meridian. From 1980 to 1986, he served as the state supervisor for agricultural education with the Idaho Division of Professional Technical Education and as Idaho State FFA Advisor. In 1985 Mundt became a teacher educator in the UI Department of Agricultural and Extension Education. He led development of the Idaho FFA Foundation, Idaho FFA Association Legislative Breakfast, and an awards selection committee with business and industry leaders as judges. In 2004 he won the Idaho Governor's Award for Excellence in Agriculture.

Paul Patterson '77, '81, Idaho Falls, has developed UI Extension programs in farm and financial management and marketing to help producers weather commodity and economic cycles of the past three decades. He instigated development of programs now widely used by producers and educators—the Crop Enterprise Budget Worksheet (CEBW) and the Machinery Cost Analysis (MACHOST) program. Patterson has received numerous awards, published 7 journal articles, 71 agricultural economics extension articles, and in 89 trade publications. He gave more than 200 UI Extension presentations and raised \$1.6 million in grants to fund his programs.

Dear Alumni and Friends:

Even with the gloomy economy and dreaded budget cuts, there are still so many things to celebrate here in the UI College of Agricultural and Life Sciences—many featured in this issue of *Programs and People*. I am certainly proud to call myself a Vandal right now! While most figures and numbers are decreasing, enrollment in CALS has been steadily increasing for three years. This year alone enrollment increased 12% for incoming freshmen.

Being a part of such a wonderful institution is exciting, and I am repeatedly inspired when I learn of stories where students, faculty, staff, and alumni are making this world a better place. In fact, many of these individuals were recognized at the CALS Spring Banquet on April 20 in Moscow. If you know of an alumnus who deserves recognition, be sure to nominate him or her for a CALS Alumni Award. We are always accepting applications. Forms can be found online or by contacting a board member.

Meeting with prospective students. Once again, we offered our annual Vandal Dogs and Dialogue events to alumni and high school students, providing them with an opportunity to visit while enjoying a tasty Vandal Dog. This year we expanded the events to include four locations: Nampa, Jerome, Pocatello, and Coeur d'Alene. We look forward to the continued success of this event, as it allows us the chance to connect with alumni throughout the state.

As always, we'd love to hear what you are up to! Please send us your updates—via "snail mail" by using the form below. Or, submit a Class Note online at www.cals.uidaho.edu/classnotes/.

Interested in volunteering or becoming a more active alum? Drop us an e-mail at calsalumni@uidaho.edu. We are looking for CALS alumni to help volunteer at the Ag Pavilion at the state fair and during Ag Days.

Sincerely,
Theresa Golis President, Alumni & Friends Association

Send in your Alumni Updates & WIN PRIZES!

Moved? New job? Just married? Kudos? Let us know! We welcome your submissions for classnotes.

All alumni who return a completed alumni update card by **August 31, 2009**, will be entered in a drawing. The grand prize winner will receive a CALS coffee mug. All entries will receive college luggage tags. So send those updates!

Name _____ year graduated _____

Please check if new address

Address _____

City/State/Zip _____

Phone home _____ office _____ e-mail _____

Here's my news! _____

Mail us, fax us, or visit our Web site to keep us updated. Office of Development, College of Agricultural and Life Sciences, University of Idaho, P.O. Box 442331, Moscow, ID 83844-2331. Fax 208.885.6654. www.cals.uidaho.edu/classnotes/



BBY123

Electronic service requested

Non-Profit Org.
US Postage
PAID
Burlington, VT
Permit #504

Programs & People | ONLINE

www.info.ag.uidaho.edu/magazine

IN THIS ISSUE

Yellowjackets and you

Ways to discourage stinging pests from your outdoor meal

Victory Gardens

Strategies for starting yours, plus links to online resources

\$16 million NIH grant

Landmark grant keeps research door open for Idaho youth



photo by BRAD BECKMAN

In Boise at the Special Olympics World Winter Games during February 2009, Canyon County's UI Extension educator Joey Peutz opened the black-tented "Germ City" exhibit to athletes representing 100 nations. An engaging component of the Healthy Athletes Health Promotion event—teaching about nutrition, hydration, sun safety, tobacco cessation, bone health—it also showed the importance of hand-washing in reducing disease transmission. Peutz and assistants applied lotion to the hands of their intrigued visitors, few of whom spoke English. Hands glowed under ultraviolet tent lights. After the recommended 15- to 20-second hand-washing session, athletes returned to see if they had removed the "pretend" germs. Results: brilliant smiles, raised thumbs, pumping fists. "They're inspirational," says Peutz. "They've been competing all day. They teach us that attitude is everything."