A Message from the Director

University of Idaho Extension has been your friend, neighbor and advisor for more than 100 years. Our statewide network of Extension educators, researchers, specialists and trained volunteers work side by side with community, state and national partners to address needs specific to Idaho. We help individuals, businesses and communities solve problems and learn new skills. We help farmers and ranchers grow our food while preserving our natural resources. We lead our 4-H program, train Idaho Master Gardeners, and teach nutrition, active living and financial education, while working in partnership with communities to create an environment where all Idahoans can thrive at every stage of life.

In this publication we are very proud to share with you some UI Extension programs and impacts from 2016. Our vision for moving forward is University of Idaho Extension: Leaders in building a thriving, prosperous, healthy Idaho. We look forward to working together with you to help the people of Idaho improve their lives.

Barbara Petty
Director, University of Idaho Extension

Agriculture and Natural Resources

- Farm and Ranch Management training resulted in 92 percent of participants able to answer the three course objectives. All participants wrote a mission statement, set strategic goals and completed an income statement, balance sheets and a financial analysis.
- Ninety-six percent of Livestock school participants moderately to majorly increased their knowledge of genomics and 88 percent increased knowledge of DNA extraction.
- Dairy personnel who participated in the Beef Quality Assurance training increased their score 21 percent on a post-test taken after the training.
- A total of 236 foresters and natural resource professionals attended UI Extension forestry programs in the Idaho Panhandle.
- Master Gardener volunteers contributed 15,094 hours, developed 127 publications/products and 300 volunteers organized or presented at events.
- Individuals are more aware of pests, use less chemicals and are more effectively managing pests thanks to the PNW Pest Alert Network. The website had 75,202 visits in 2016.
- The 2016 wheat crop falling number score resulted in the loss of millions of dollars for growers, which has led UI Extension researchers to launch multiple studies, many funded by the Idaho Wheat Commission, to better understand the situation.

Community Development

- A partnership was established with UI College of Art and Architecture professor Gary Austin and UI students to design and develop two greenhouse proposals in Valley County.
- Data from a bike and pedestrian transportation study conducted by UI Extension in Valley County was used to successfully obtain Safe Routes to School corridor funding by the Idaho Transportation Department.

Family & Consumer Sciences (FCS)

- Food Safety faculty and Master Food Safety Advisors presented workshops and reached individuals at health fairs, farmers markets, preparedness fairs and county fairs. Forty-nine trained volunteers donated 1,152 hours of food safety education to the greater Treasure Valley area.
- Jeff Kronenberg’s work with training and implementing quality Hazard Analysis and Critical Control Point (HACCP) systems with food processors has resulted in a $56.5 million economic impact according to surveys conducted by the U.S. Department of Commerce and National Institute of Standards and Technology.
- UI Extension is partnering with the Idaho State Department of Agriculture to deliver educational programming for the Food Safety Modernization Act. A multistate grant is providing funding for UI Extension to conduct education in Alaska, Idaho, Oregon and Washington.
- Participants of the Healthy Diabetes Plate program increased knowledge or ability to plan diabetes meals through classroom meal planning and social media outreach.

4-H Youth Development

- During 2016, 4-H Youth Development reached 65,455 youth and 14,181 were involved in 4-H clubs.
- UI Extension 4-H food preservation curriculum authored by Grace Whitman, Donna Gillespie and Rhea Lanting was accepted as a national 4-H curriculum.
**Producing Quality Beef**

When the cattle industry markets beef as the prime focus on the dinner table, it also promises that the main course will live up to consumers' expectations for quality. That is the goal of Idaho's Beef Quality Assurance (BQA) program. 

UI Extension educators and specialists work with audiences as varied as ranchers, 4-H youth and employees of Idaho's major companies to help them maintain consumer confidence in beef. 

UI Extension educators, Scott Jensen, in Owyhee County and Shannon Williams, in Lemhi County serve as the state BQA co-coordinators. Half or more of the state's beef producers, who range from those with a few steers to a company that can feed 120,000 head at a time, sign up for the voluntary certification program.

**Vigilant About Bacterial Ring Rot**

A major disease threat to potato production demands constant vigilance. Unfortunately, human nature abhors consistency. So when information about bacterial ring rot gets sparse, meaning potato producers are paying attention to basic sanitation practices, people tend to forget the threat.

Adherence to sanitation practices becomes lax and bacteria multiply. Bacterial ring rot rears its ugly head again.

And so it was in 2012. A bacterial ring rot disease outbreak caused problems for growers, forcing some to leave severely infected fields unharvested.

UI Extension responded quickly, providing information about proper sanitation for seed cutting and other steps of the potato production chain.

After a series of presentations, newsletters and newspaper articles, emails, phone calls and Extension materials, the incidence of bacterial ring rot dropped 90 percent from 2013 to 2015 when only three positive samples were tested.

The education campaign was so effective, 97 percent of the Kimberly Research and Extension Center potato storage advisory committee's 45 members said it helped reduce bacterial ring rot in the field.

**Falling Numbers**

Last year, wheat farmers across northern Idaho and in adjacent states watched world wheat prices drop as an abundant crop—including their own—neared harvest. They remained optimistic that the high yields would offset low prices. Then reality hit, the crop's quality was subpar because of a complicated falling numbers test protocol.

Suddenly as much as 40 percent of their crop was affected by a test that could divert much of their harvest from the human food market to animal feed at much lower prices. The low falling number scores cost growers millions of dollars.

The falling numbers test measures the amount of time it takes a stirring rod to drop through a cylinder of gelatin-like wheat starch. A thin starch gel means a low falling number score. Many wheat millers make 250 the minimum number they will accept for making flour, and prefer wheat with scores of 300 and up.

Researchers say factors such as big temperature swings, highs in the 70s or 80s and lows in the 30s, early in the 2016 growing season damaged wheat kernels as starch was forming.

Increasing problems with falling number scores led UI Extension researchers to launch multiple studies, many funded by the Idaho Wheat Commission, to better understand the situation.

UI wheat breeder Jianli Chen will focus a study on finding the causes and effects of low falling number scores in hard white spring wheat grown in 2015 and 2016.

Food scientist Amy Lin is studying the wheat enzymes alpha-amyases and their effects on falling number scores. Lin will study the effects of pre-harvest sprouting on wheat starch and flour quality.

UI wheat geneticist Daolin Fu will study the enzymes that affect wheat quality and their genetic basis.
**Water Saving LESA Technology**

UI Extension water management engineer Howard Neibling and colleagues at Washington State University are developing new technology that could change the way farmers use water.

A new center pivot irrigation technology, Low Elevation Spray Application (LESA), applies water in the crop canopy, about one foot above the ground, resulting in almost twice the amount of water delivered to the soil surface on hot, windy days relative to traditional sprinkler placement. Seven pivots of LESA and conventional sprinkler mounting were tested in Idaho and additional sites in Nevada, Washington and Oregon.

Results showed a seasonal water savings between 20-30% compared to sprinkler packages with a typical rotator or wobbler mounted 5-7 feet above ground. Water savings are due to less evaporation and wind drift loss as water falls from the pivot and reduction in evaporation of water caught on plant leaves that evaporates before it can reach the soil.

Water efficiency on the system is currently estimated at 90-92%, compared to 60-70% for hand and wheel lines and 80-85% for traditional low pressure center pivots. Use of the LESA method could considerably help to mitigate current irrigation cutback requirements.

Current testing is underway to determine soil and slope limits.

**Secure the Shelter-Blaze**

The extreme wildfire season in 2015 and loss of structures and residences prompted UI Extension to explore ways to increase the resilience of Idaho communities in the face of wildfire.

The result was a digitally immersive educational experience that engages homeowners located in the Wildland Urban Interface (WUI) in understanding how to prepare their properties during wildfire season.

The Secure the Shelter-Blaze wildfire simulation fosters the exploration of real world outcomes without the real world consequences through a virtual environment. The simulation teaches homeowners best practices to make their properties defensible during a wildfire event, including appropriate choices regarding materials, landscape and maintenance.

The Blaze project illustrates the power of a cross-disciplinary team as shown through the partnership between UI Extension, eXtension, the Wildfire Community of Practice, Insurance Institute for Business & Home Safety, Bureau of Land Management, Idaho Department of Lands and UI Vandal Solutions.

The simulation can be found at [www.securetheshelter.com](http://www.securetheshelter.com).

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**Masters of Forest and Water**

Idaho citizens can receive specialized training in several areas through UI Extension. Two great examples are Idaho Master Forest Stewards (IMFS) and IDAH2O Master Water Stewards.

IMFS is a certified volunteer program that provides educational assistance to help forest owners and others learn more about Idaho forestry. IMFS training includes 70+ hours of indoor and outdoor learning activities. After certification, Master Forest Stewards undertake a variety of volunteer activities, including helping with workshops, teaching youth about forests and writing newsletters and articles on forestry.

IDAH2O Master Water Stewards attend an 8-hour workshop that combines classroom instruction and hands-on fieldwork. After certification, volunteers adopt a stream location to monitor regularly. The purpose of the program is to collect basic water quality data for Idaho streams to help learn about and document regional water issues. The program also educates Idaho citizens on the status of their water quality while helping them understand the effects of storm water.

- Program began in 2008
- 1,745 hours logged and 6,210 contacts by IMFS in 2016
- 30,100 contacts by IMFS since the program's inception

- Program began in 2010
- 332 current certified Master Water Stewards
- 207 stream monitoring sites in Idaho with 41,149 data points
Revamped 4-H Teen Programs

At the recommendation of a 4-H teen task force, University of Idaho Extension 4-H Youth Development began implementing changes to teen programming in 2016.

The programs now offer a wide range of opportunities to a greater number of teens statewide. Content of each program is being evaluated to make sure it meets the needs of today’s youth.

Statewide steering committees have been formed in three key programs—Know Your Government (KYG), Idaho 4-H State Teen Association Convention (STAC) and 4-H Ambassadors. Members of the steering committees include 4-H professionals, volunteers and youth, with 4-H youth being the majority of the members.

KYG teaches youth about the legislative and judicial branches of Idaho government, culminating in a three-day trip to meet with representatives at the state capitol. While KYG will remain similar in focus, it will also allow for greater input from participants to improve program content.

Significant change is being made to STAC, the former 4-H Teen Conference.

The program will have a greater focus on post-secondary education and career exploration. The 2017 STAC will be the first event with a new structure and will include the addition of youth participating in the Build Your Future program. This program focuses on important life skills needed after high school and is being offered to non-4-H youth as a part of the University of Idaho’s efforts to increase the go-on rate in Idaho. Youth who complete the program in their county receive the opportunity to attend STAC at no cost.

The 4-H Ambassador program has traditionally been offered to youth in 9th grade or older. The teen task force recommended creating a district ambassador program offered to youth as young as 7th grade to involve them earlier. Steering committees and content are now being formed for the redesigned program.

Focus on Civic Engagement

Service to the community has long been one of the hallmarks of 4-H. Every 4-H club across the state engages in some form of service—from adopting a highway to helping with community events. 4-H also offers educational programs to teach youth about civic engagement.

An example of one of these projects is Citizenship Washington Focus (CWF). This program helps participants understand the importance of civic and social responsibilities with a focus on developing better citizens and leaders.

Every three years since 1962 a contingent of Idaho 4-H youth from Nez Perce County have traveled to Washington D.C. at the culmination of the project to see our government operates firsthand.

CWF is offered every year, however, due to the large financial obligation for participants to attend, Nez Perce County has turned it into a three-year program. Over the three years, participants meet monthly to learn about the civic process and hold fundraisers several times a year.

At the end of the project, delegates travel to Washington D.C. where they tour monuments, museums and attend meetings with representatives on Capitol Hill.

CWF project volunteer Art King noted that participants often return to school after their trip with a new appreciation and knowledge of the civic process.

“Almost anyone you talk to who has gone on this trip; it makes school more interesting and they do better in their history and government classes because they can relate much more closely to the content,” King said.

The next trip to D.C. is scheduled for 2018 and will include 33 total delegates—24 from Nez Perce County, three from Latah County and seven from Idaho County.

2016 4-H Participation Numbers

- 84,534 enrolled projects
- 774 public speaking projects
- 7,475 enrollments in leadership/personal development projects
- 12,307 teens engaged in 4-H activities
- 840 youth volunteers

The next trip to D.C. is scheduled for 2018 and will include 33 total delegates—24 from Nez Perce County, three from Latah County and seven from Idaho County.
Small farmers and ranchers are critical to the resiliency, economy and food security of rural areas in Idaho and necessary for local food access in urban sectors. In 2016, with funding from the USDA-NIFA Beginning Farmer and Rancher Development Program, Cultivating Success, Idaho began a three-year program to provide education for new farmers, facilitate access to land, capital management training and farmer-to-farmer mentoring.

A multi-part, hybrid course was developed and delivered by UI Extension through live webinars, in-person instruction and guided farm tours at nine sites across the state. In 2016, a total of 10 UI Extension educators, two program coordinators, six farmers and two nonprofit professionals from partners Rural Roots and Inland Northwest Food Network collaborated to provide this program for 145 individuals.

Participants attended a variety of programs with a focus on whole farm planning and sustainable practices for both crops and livestock production. Individuals participated in evaluations to measure the effectiveness and impact throughout the program.

The course was a success while reaching new audiences and connecting them with high quality, reliable education regardless of access and geographic barriers. Both new and experienced small farmers and ranchers were introduced to UI Extension, local resource providers and one another. This networking encouraged personal connections and potential local support systems.

Future activities for Cultivating Success Idaho will build on these successes and refine the course for new audiences.

Gardening in the Digital Age

Interest in do-it-yourself and gardening projects has risen in recent years. This interest increases the need for horticultural diagnosis and unbiased information that will inspire success.

UI Extension in Ada County observed that clients were seeking more online resources for gardening issues and ideas. Traditionally, UI Extension disseminates information and education through face-to-face group classes or workshops, phone tutoring or newsletters and newspaper articles. The UI Extension Ada County Master Gardeners saw the need to move into the digital age and established social media accounts that have increased substantially in followers over the past two years.

In 2016, the Master Gardeners approached the state’s largest news publication, the Idaho Statesman, with the idea of producing weekly garden features, including news articles and videos for their digital e-newsletter, YouTube channel and social media accounts. Master Gardeners worked with the newspaper to tailor gardening topics for the widest audience, keeping information basic and practical.

A 32-week series of gardening articles and videos were launched and clicks on the Master Gardener videos numbered roughly 12,000 per week. In addition, the National Extension.org Master Gardener Facebook page, which reaches a global audience of 120,000 per posting, shared the content.

During this 32-week series, the UI Extension, Ada County plant diagnostic clinic experienced an increase in face-to-face visits, telephone calls and emails from the local community. Plans are to continue this partnership as UI Extension adapts to meet the needs of a changing population.
Community Partnerships

UI Extension, Valley County educator Melissa Hamilton has worked with the small communities in the West Central Mountains (WCM) of Idaho on numerous projects to strengthen impact on regional planning and coordination. Hamilton noticed a lack of partnership between the WCM communities and set out to bring them together.

The America’s Best Communities (ABC) contest was a way to incentivize the communities to expand regional collaboration. Over the course of three years trust between the communities had a chance to grow and barriers were addressed.

Shared challenges were identified and an economic development strategy was written, adopted and short-term initiatives have been implemented.

The main objective of the ABC contest in the WCM was to form a regional committee to address shared challenges.

Hamilton has served on the committee since 2014 as the planning and visioning chair and was team lead on several short-term initiatives.

The WCM team won $50,000 from the ABC contest which allowed them to develop the WCM Economic Development Strategy. Additional funding of $100,000 received from the ABC contest was dedicated to the implementation of 21 short-term initiatives that supported efforts to address the six main challenges identified throughout the region. The American Planning Association awarded the WCM community effort the national 2016 Vernon Deines Merit Award for an Outstanding Small Town Special Project Plan.

WCM made it all the way to finalist for $1 million from ABC. Although the community didn’t win the big prize, the partnership will continue on to reach the long term goals of the West Central Mountains.

Community Food Assessment

As the demand for locally produced food has increased, so have questions regarding how food systems work and the limitations to consumers, farmers and the environment.

In 2014, UI Extension in Blaine County, along with the Hunger Coalition and 25 other community organizations, conducted the Blaine County Community Food Assessment (BCCFA). Using a USDA toolkit to guide the process, the team started a community conversation, followed by focus groups, interviews and community surveys. After the yearlong assessment, a 35-page final report was presented to the community in the fall of 2015.

Assessment findings led to the formation of the Blaine County Food Council which is directed by UI Extension, Blaine County. Future plans of the council include: expanding community gardens for food insecure groups; educating consumers on how to cook fresh produce; implementing a buy local campaign to increase awareness of locally produced food; conducting educational programs on home composting; and expanding food processing capabilities in south-central Idaho.

The community of Blaine County, with the help of UI Extension, is taking a step in the right direction to help move a shared vision for a more robust and sustainable food system forward.
Eat Smart Idaho Benefits from Partnerships

The success of UI Extension’s Eat Smart Idaho (ESI) program is due in large part to the thriving partnerships between UI Extension faculty and staff and local communities. Eat Smart Idaho provides nutrition and physical activity education to Idahoans with limited resources and relies on statewide partnerships to further its goals.

A partnership with the Coeur d’Alene School District has resulted in the education of over 5,000 youth at 10 elementary schools through the Smarter Lunchroom Movement Project. This project involves implementing no-cost or low-cost changes in school cafeterias that help the healthy choice become the easy choice. Changes can be as simple as moving the white milk in front of the chocolate milk or renaming menu items with more enticing titles. For example, carrots were renamed garden fresh crunchy carrots.

The Coeur d’Alene Fire Department also partners on this project, lending their firefighters for outreach efforts at the schools. Their efforts include talking with youth about healthy eating habits, handing out carrots, conducting taste tests and submitting healthy recipes for a cookbook given to all children at the schools.

ESI nutrition advisors have also partnered with the Boise Mobile Farmers’ Market in Ada County, providing indirect education at seven different Mobile Market stops during the 2016 market season. Each week one of the produce items available for purchase was featured and used in a recipe. Free samples and recipe cards were handed out to encourage shoppers to try different produce. ESI participated for seven weeks and reached 238 adults.

ESI has also seen an increase in partnerships with local food banks and food drives. The Cooking Matters classes offered through the Idaho Food Bank often feature an ESI nutrition advisor teaching about the value of nutrition in a recipe. The classes are offered through the food bank and include information on the recipe ingredients, information on general nutrition, instruction on food preparation and cooking tips.

The future for Eat Smart Idaho involves improving access to physical activities for clients. Partnerships will play a key role in these efforts as well. Learn more at www.eatsmartidaho.org.