Montana State University College of Agriculture Winter 2014

Linked to Agriculture

Inside:

Watching the seasons change on campus is something special. This semester we've been lucky enough to have one of those glorious Indian summers, where summer extends her warm reach into the late fall months. Winter arrived in December with a bang, and students have now retreated home for holiday break. It's been the kind of semester any Montana student, farmer or rancher can appreciate: vibrant sunrises, healthy harvests, a strong snowpack, and the feeling that we're all incredibly fortunate to call Montana our home.

The shift in seasons has also brought transition and change to Linfield Hall. This August, I was asked to take the desk as the Interim Dean of the College of Agriculture and Director of the Montana Agricultural Experiment Station. It was a swift and unexpected move, but one I was thrilled to honor. My predecessor, Jeff Jacobsen, weathered five legislative sessions and ten years as Dean and Director and he left the College of Agriculture in superb shape. We wish him well as he continues his passion for critical agricultural production issues. Dean Jacobsen's relationships, legacy and accomplishments will long be remembered and respected.

As Old Man Winter is settling in into the Rocky Mountains and we prepare for spring semester, the College of Agriculture and MAES will continue through a period of adjustment as well. However, if there's one truth about our students, faculty and staff, it's that we know how to handle change. We've been around since 1893. If there's any group of people who know the value in meeting a season of uncertainty and becoming stronger on the other end, it's our extended agricultural family.

This year we raise our glass to 120 years as the oldest (by one day) public institution of higher education in Montana. In the here and the now, we've welcomed record enrollment, added outstanding faculty to our team, and continue to work hard on our teaching, research and mission that make us a proud leader of agricultural education and research.

To our friends and family across the state and here at home, here's to a season of change and the wonderful happenings ahead in the New Year.

Glenn Duff
Interim Dean and Director
College of Agriculture and
Montana Agricultural Experiment Station

Student Garden at MSU's Horticulture Farm.

On the Cover: Student-built rain garden surrounding the Horticulture Farm Barn. September 2013.

COLLEGE OF AG
2013 SNAPSHOTS

More than **1,100** undergraduate and graduate students with **48** states and **21** countries represented

204 buildings, totaling **407,200** sq ft

Two llamas

29 Veteran students

29,372 acres of land affiliated with MSU/MAES

One herd dog and **one** guard dog

578 resident students and **499** non-resident students

147 faculty and **246** staff

24 geldings and **18** mares

One of **two** university housed wool research labs in the nation

Three of the top **five** academic departments in research expenditures at MSU

776 steers

21 academic options and **7** minors

12 undergraduate degrees and **13** graduate programs

2.5 million acres in Montana are growing wheat varieties developed at MSU

BARN'S UP

There's a brand new barn in town. Still smelling of fresh sawdust and newly settled ground, it's hard to imagine life without MSU's new Horticulture Farm Barn.

The erstwhile roofless structure, around since the 1960s, is now a beautiful barn sitting proudly in the middle of 10 acres at the Bozeman Agricultural Research and Training Farm — minutes from campus. The new Horticulture Farm Barn is now home to all things horticulture: teaching, extension programs, research projects, student activities and community gardening. While the barn was erected to serve the needs of MSU's College of Agriculture and the Montana Agricultural Experiment Station Horticulture ventures, it's now a communal gathering place for a multitude of classes, people and projects.

The new Horticulture Farm Barn's walls are lined with a summer of well-used tools, muddy boots and a walk-in cooler full of fresh produce — a testament to the Horticulture Farm's bustling activity and the essential shelter and space the barn now provides.

The Horticulture Farm encompasses eight cultivated acres and hosts coursework in Plant Sciences & Plant Pathology, Land Resources & Environmental Sciences, Education, and Health & Human Development. It's also home to the Sustainable Food and Bioenergy Towne's Harvest Garden, a three-acre vegetable and research garden that hosts teaching and research efforts.

Horticulture Farm Manager and Plant Growth Center Director David Baumbauer said the new barn was desperately needed.

"For one thing, it's much safer and warmer than the old lath house," Baumbauer said. "The new barn really adds a lot to the farm, because now there's an actual center for the farm and all of its programs here."

Baumbauer added, "It's nice to have a central space dedicated to the many projects, classes and programs the entire Horticulture Farm supports. The Horticulture Farm also hosts Gallatin County Extension Master Gardener classes, a vineyard, hop garden, orchard, pumpkin patch, Iris garden (with some varieties more than 35 years old), student gardens and five high tunnels that grow early and late season crops. The farm donates leftover produce to the Gallatin Valley Food Bank, and contributed more than 150 lbs. of fresh produce some weeks this summer. ■

The Horticulture Farm Barn's progression from the old lath house to the barn's current landscaping. Photo courtesy of David Baumbauer.

The newly constructed Horticulture Farm Barn, with a surrounding rain garden. The rain garden was designed and installed by Jennifer Britton's Horticulture 336 class.

New Heads

Animal & Range Sciences and Agriculture Education

Patrick Hatfield, associate professor and interim department head of Animal & Range Sciences

Patrick Hatfield is a Montana native who received his B.S. in Range Science from MSU in 1983. He attended New Mexico State University for a M.S. in Range Science, and later a Ph.D. from the University of Nebraska in Animal Science. Hatfield spent eight years as a research scientist at the U.S. Sheep Experiment Station in Dubois, Idaho, before joining the faculty in the Department of Animal and Range Sciences in 1996. Hatfield's research is focused on two main areas: Nutritional strategies to improve sheep production and incorporating sheep into farming systems to reduce off farm inputs. He also teaches Livestock in Sustainable Systems, Applied Techniques in Livestock Management, Sheep, Sheep Management and a graduate course in Ruminant Nutrition.

Tracy Dougher, associate professor and interim division head of Agricultural Education

Tracy Dougher grew up in Illinois and received a B.A. in Mathematics from Southern Illinois University in 1991, where she also began her college teaching career. She attended Purdue University for an M.S. in Horticulture and Utah State University for a Ph.D. in Plant Sciences with an emphasis on Crop Physiology. She joined the MSU faculty in Plant Sciences & Plant Pathology in 2001. Her research focus is on commercializing production of native plants for Montana landscapes and exploring innovations in teaching. She teaches an introductory course in horticulture called Miracle Growing, as well as Herbaceous Identification, Plant Propagation and Turfgrass Management.

Proposed Endowed Chair Meets $1 Million in Funding

Plans in the works for Plant Sciences & Plant Pathology Endowed Chair for state research

Funded entirely by Montana producer dollars, the first $1 million has been raised toward the new Montana Plant Sciences Chair in Montana State University College of Agriculture.

When the fundraising is complete, it will be the first chair established in the history of the College of Agriculture at MSU.

Driven by a partnership between the Montana Grains Foundation, MSU President Waded Cruzado and the MSU Alumni Foundation (MSUAF), this chair is unique in its organization.

"We were so impressed by the passion of Montana producers to make the MSU Plant Sciences Chair come to life," said Cruzado at Celebrate Agriculture Blue & Gold Breakfast held at MSU this fall. "Research is vital to producers and is of exceptional merit at Montana State — it made for a natural partnership."

Dale Schuler, president of the Montana Grains Foundation, presented a $1 million check to President Cruzado during the breakfast, and said the partnership represents how passionate producers are about their future.

"Raising these funds is no minor effort," explained Schuler. "While we were somewhat daunted by the task, we knew from the beginning that this chair must be created. MSU is the primary 'R&D' arm for Montana farmers."

Schuler pointed to shrinking federal and state funding making private donor support increasingly important.

"Research is more important than ever before as the world continues to grow in population and our food supply shrinks. As producers, it is a necessity to explore new and innovative solutions."

With the first million secured, producers are well on their way to achieving the $5 million endowment goal by 2018, and one step closer to increasing yields.

Montana is the highest quality wheat producer in the nation. However, threats by the yield-ravaging wheat stem sawfly and constant drought issues continue to plague producers.

"The chair will have an advisory council, with producer representatives who are leaders in their field," he said. "The council will continually evaluate the 'greatest need' for Montana's crops industry, and the chair will be expected to focus on that need." In addition, the advisory council and the College of Ag will report back research developments to growers.

"The leadership behind this initiative took a thoughtful and expert approach that was focused on serving the crops industry," said Michael Stevenson, president and CEO of MSUAF.

Stevenson added that leaders such as Schuler and Lochy Edwards, also on the Montana Grains Foundation, were key to moving the initiative forward.

As of press time, the MSU Plant Sciences Chair is just shy of reaching a $2 million benchmark. MSU can begin searching for chair candidates once the benchmark is met, and producers are encouraged to participate in the chair's success. For more information, contact MSUAF Director of Business Development Lori Cox at lori.cox@msuaf.org, and at 406-994-4595. ■

FIRST GENERATION COLLEGE STUDENT

CHARGING AHEAD

Sarah Snow is the kind of girl that gets things done. And she'll tell you that herself. The girl's got a list of extracurricular activities most people gawk at: she enrolls in 19 credits a semester, holds a part-time job working the floor at Murdoch's, and still makes the honor roll every year. According to Snow, in order to to be successful, you've got to get busy.

"I do better when I have lots going on," she said. "That way, I don't have the time to think about what I'm not doing, or what I need to be doing. I just do it because I have to."

The oldest of four children in a military family, the outspoken and boisterous girl from Laurel, Mont., always knew higher education was a goal. Never mind the fact she'll be the first person in her family to graduate with a college degree.

Snow's dad was an electrical engineering teacher in the military and her mother worked as a certified nurse's assistant after some high school. Somewhere in between raising a family, moving around the country, and wanting to eventually get back to Montana—higher education didn't present itself as a significant priority.

"My grandparents, parents and extended family are all very hardworking, smart people," Snow said. "College was always a goal for me, and my parents always encouraged me to attend. They have helped me reach every goal I've ever had."

Hailing from a long lineage of native Montanans, Snow set her sights on agriculture business at a young age when she fell in love with Future Farmers of America in high school. After a successful and engaging experience as an FFA office, Snow enrolled in the College of Agriculture at MSU.

Four years later, Snow has joined the likes of Alpha Zeta, College of Agriculture Ambassadors, Farm Bureau's Young Farmers & Ranchers, Big Brothers & Sisters and FFA. She will graduate next fall with dual majors in Agricultural Relations and Agricultural Business.

Snow also has her sights set on agricultural advocacy in the near future and contributes her passion for the agriculture industry to her economics and business classes.

"We're one of the top ag business and economics programs in the nation, and to come out of MSU with a degree in those fields really means something," Snow said. "I attribute everything I've learned and am driven toward to my ag advisor, my family, and my business and economics professors. They're amazing."

Snow said her classroom time spent in economics and business classes provided the fodder for her ultimate professional goal; law school.

"My professors and classes have shown me that small ranching and farming operations, and the huge importance of food, fiber and natural resources are the bottom line," she said. "Without those things, no one would survive. So for me, I want to use law and policy to be an advocate for ag."

Emerging from a first-generation college student, to a potential jurist doctorate wasn't always an easy progression, Snow said.

"There were definitely times when I wanted to pack my bags and head home," she said. "A lot of times it was intimidating working alongside students whose parents and grandparents went to college, so it was easy to feel overwhelmed."

Snow said every time she doubted herself in her college studies, her family back home and her family at the College of Agriculture encouraged her to stick with her degree commitments. Being the first person in a family to graduate college doesn't necessarily make them a better or worse student, but it certainly makes them open to all opportunities, according to Snow.

"First generation college students like myself bring a whole new perspective to the university," Snow said. "I think it's because we're brand new. We don't have stories or experiences from our parents that influence our time here, so for me the whole experience has been amazing."

Snow will graduate fall semester 2014, and says she'll remain an advocate of MSU and the College of Agriculture for the rest of her days.

"The whole college, amazing faculty and family feeling here is just the best, first generation college experience or not" Snow said. "I'd do it all over again in a heartbeat." ■

Building Global Leaders of Tomorrow

Agricultural Education and Communications Students Traveled to Capital

Thirteen students from the College of Agriculture traveled to Washington D.C., this June along with students from Texas Tech University. The study experience at the nation's capital exposed students to the complex nature of communicating agricultural issues. The trip was partially funded through a CHS grant.

Division of Agricultural Education Assistant Professor Shannon Arnold said the trip was instrumental for students to understand the global picture behind agricultural communications.

"Washington, D.C., is a unique setting that combines federal agencies, lobbying firms, special interest groups and legislators that all have significant roles in the development, integration and distribution of agricultural knowledge that impacts people both nationwide and abroad," commented Arnold. "This program was conducted in collaboration with the Texas Tech University Department of Agricultural Education and Communications to further enrich the student experience and networking opportunities."

MSU agriculture students on the steps of the Capitol Building.

The program goal was to change how students view and interact with agricultural issues, emphasizing communication in an international context. Program objectives included expanding students' knowledge of domestic and international agricultural issues and their influence on global policy decisions. Students also learned about competition in the national and global workplace, and the importance of communicating how local, state and national agencies influence, persuade, educate and inform a diverse group of stakeholders to make major decisions for agriculture.

Topics included:

- Current agricultural issues and initiatives, including the Farm Bill
- Agricultural history in the United States
- Communication campaign development, implementation and evaluation
- Policy and legislation impacting agriculture
- Public relations efforts of special interest groups
- Lobbying for agricultural interests
- Outreach and educational efforts

The trip offered students a better understanding of how policy decisions are made regarding agricultural issues. Visiting the organizations allowed them to comprehend how units work together to make major decisions for agriculture. "At all points during this trip, the emphasis was on communications and how it is employed to influence, persuade, educate and inform a diverse group of stakeholders," added Arnold.

The trip's learning-centered theme also won an award at the Western Region Agricultural Education Conference in September; 5th place in Innovative Idea - Poster, "Agriculture in the Nation's Capital: Organizing a Study Experience to Washington D.C." ■

College of Agriculture

Department of Plant Sciences & Plant Pathology

Awarded Major Research Grants

At a time when the federal funding rate for research grant proposals in the hard sciences is hovering around 3 percent, MSU's Department of Plant Sciences & Plant Pathology has added two new grants this semester alone. Mark Young, professor of molecular bioscience, and Luther Talbert, professor of genetics, and colleagues have received highly competitive federal funding for independent projects.

Yellowstone Microbial Research will Deepen Understanding of Viruses

Mark Young, professor of molecular bioscience, knows how hard it is to get funding these days. In fact, he attributes his recent five-year, $1.9 million dollar grant from the National Science Foundation to pure luck.

"It's not enough these days to have a good idea for a potential grant," Young said. "You've got to have the very best idea. There are so many important ideas out there from great scientists, so I do feel very privileged and lucky to have been successful with this one."

Of course, it's more than luck that helped the funding success of Young and his research team. Young, in conjunction with his grant colleagues from Georgia Tech and the University of Illinois, are asking a particularly compelling question about viruses. The project, "Dimensions: Costs and Benefits of Chronic Viral Infections in Natural Ecosystems," will examine the benefits of viruses to ecosystems — rather than the age-old assumption that viruses are only bad news. The grant's major goal is to research how viruses control the structure and function of most ecosystems, and whether or not viruses contribute positively to the ultimate success of a host.

According to Young, viruses play an extremely beneficial role when it comes to living systems, our ability to adapt and the ultimate health of ecosystems. Currently there is little known about the way viruses control the function and composition of ecosystems. Young said that if we removed viruses from the planet, life would be entirely different.

"We're looking at an alternative hypothesis about viruses, how and why they are beneficial to ecosystems," Young said. "Our central claim is that viruses are incredibly important and beneficial, and we're going to explore the range of interactions they provide to an ecosystem."

To do this, Young and his team will be conducting microbial research in the hot springs of Yellowstone National Park. The park's hot springs provide a kind of isolated island — without any natural predators to threaten the virus and its host cells. This is important, Young said, when it comes to studying how viruses interact.

"We're lucky for the unique resource and regional capacity that is Yellowstone," he said. "The boiling hot springs provide a simplified ecosystem so that we can establish fundamental principles when it comes to the behavior of viruses."

"We have people here who are competing nationally against schools like Harvard, Yale, Wisconsin and other large research-focused institutions. These grants speak to the competitive and engaged quality of our faculty."

—JOHN SHERWOOD, PHD, DEPARTMENT HEAD, PLANT SCIENCES & PLANT PATHOLOGY

What Young's research will mean for agriculture is a better of understanding of the susceptibility of crop production to viruses. Ultimately, Young also anticipates this research will provide new insights into how viruses influence the biodiversity of plants and animals, in addition to the field of microbial diversity.

Using the Past to Adapt to the Future

MSU Wheat Geneticists and Entomologists Screening Ancient Grains to Combat Sawfly

Each year, millions of dollars are lost from Montana's agricultural economy due to the highly destructive pest that is the wheat stem sawfly. If Luther Talbert, professor of genetics, and his fellow research team have anything to say about it, this will change.

Recently the recipients of a $500,000 grant from the United States Department of Agriculture (USDA) and the National Institute of Food and Agriculture, Talbert, Jamie Sherman, associate resident professor in plant sciences, and David Weaver, associate professor of land resources and environmental sciences, are planning on finding the next line of defense against the sawfly. Using a collection of the USDA's ancient landraces, the team is researching and screening ancient wheat varieties in an effort to see which strains have elements of genetic resistance to the most destructive pest in Montana.

For more than 50 years, Montana's ranchers and farmers have been using solid-stem wheat to combat wheat stem sawfly infestation. Unfortunately, the sawfly is adapting and thriving, and the solid-stem wheat variety is no longer a reliable form of singular resistance. The overall effect of the sawfly is disastrous. Females lay their eggs in the spring inside the wheat stem, the larvae eat the inside of the stem over the summer, which destroys the plant and eliminates yield production. In the fall, larvae cut the wheat stems at the base, which gives the larvae the ability to emerge for the next production cycle.

"Solid stems are still a pretty good form of resistance for many people. But it appears that the sawfly may be becoming genetically better at living inside solid wheat-stems and becoming a bigger pest in Montana, and is spreading to other areas."

According to Talbert, now is the time to find another scientific breakthrough that will help agriculture producers thrive into future decades.

The grant project, formally titled, "New Genes for Resistance to the Wheat Sawfly from Geographically Targeted Landrace Accessions of Wheat," is utilizing the USDA's collection of ancient landraces produced in historic sawfly-infested sites. Ancient landraces are those varieties that developed over time and have successfully adapted and survived their environments. Many landraces have higher genetic integrity than formal breeds do. The USDA's collection of landrace wheat varieties hail from all corners of the world; centuries old varieties from Turkey, Portugal, Europe, Spain and Northern Iran will be planted in sawfly-infested sites in Montana.

The goal is to identify lines that are resistant to the sawfly's destructive nature. The lines themselves lack the favorable genes for yield and end-use quality found in our modern varieties and would not be suitable to grow at the moment. Using molecular biology, Luther and his team can identify genes present in these ancient lines that cause resistance to the sawfly and move them to modern high quality wheat varieties.

Recent work from Weaver's entomology project has shown that other forms of resistance may be available to complement solid stems. "David and his group are able to assay the sawfly larva inside wheat stems to determine the effect specific plant genes are having on them," Talbert said. "Our job now is to identify genes in wheat that interrupt the sawfly life cycle (see figure) and keep them from damaging the plant."

Talbert added that the end goal is to genetically modify new wheat varieties that resistant genes produce.

"Ultimately, we want to develop markers for resistance, so that we can develop more reliably resistant varieties. Using these lines which have been selected by ancient farmers to grow in sawfly-infested areas will allow us to do this," Talbert said.

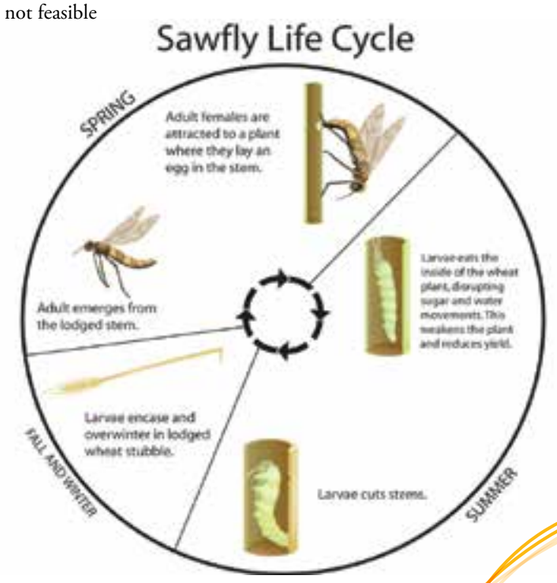
New resistance targets for wheat stem sawfly include everything from influencing female choices in laying eggs through compounds in the stem that kill the larvae. In a systemic approach, data will be collected from the fields, laboratory staff will process samples and dissect stems and finally — genetic studies will identify new genes for resistance. The end goal is to use molecular markers to incorporate the resistant genes into new varieties of wheat. Talbert said searching for resistant traits of these ancient grains is one of the only ways to sufficiently control the sawfly.

"Sawfly is a chronic problem and other forms of control such as chemical sprays and crop rotations are often not feasible or economical," Talbert said. "Genetic resistance is the only way to solve the sawfly problem."

From the field to the lab, the project is taking on a collaborative approach at every turn. A host of Montana farmers and ranchers are contributing to the grant's success, in addition to private, international wheat breeding companies and the research centers of the Montana Agricultural Experiment Station. Private landowners have offered to plant the wheat varieties themselves, and on their own acreage for screening purposes. Private industry producers such as Bayer CropScience, Limagrain Cereal Seeds, Monsanto and Syngenta are offering research assistance.

"One very exciting thing about this project is that a lot of companies and Montana producers are helping us complete the work," Talbert said. "Without our private industry colleagues and Montana supporters giving up their own acreage for the good of the cause — we wouldn't be able to do this."

The wheat stem sawfly is a key pest of wheat in the northern Great Plains of the U.S. and Canada. The most heavily infested areas have been northern and eastern Montana, western North Dakota, northern South Dakota and southern parts of the Prairie Provinces of Canada. According to the USDA, gross product loss to the sawfly is estimated at $350 million for the Northern Great Plains, and near $100 million annually for the state of Montana alone. The solid stem trait discovered by breeders and entomologists decades ago has saved growers many millions of dollars over the years. Talbert and his team hope that this new grant will provide the opportunity for current researchers to identify new genes for resistance, and leave a similar legacy for wheat growers in the future. ■



Montana's First VET-MED PROGRAM

Pre-veterinary anatomy class.
MSU photo by Kelly Gorham.

Montana might soon see an increase in rural veterinarians, who are greatly needed across the state. Thanks to recent funding and approval from the 2013 Montana Legislative session, 10 lucky Montana students will be able to start their veterinary coursework here at MSU. Next fall, the Montana Cooperative Veterinary Medicine Program will open its doors to students who plan to be veterinarians.

In a cooperative approach with Washington State University, the new Vet-Med program allows students to complete their first year of veterinary coursework at MSU, then complete their remaining coursework at WSU's College of Veterinary Medicine in Pullman, Wash. In an effort to develop strong ties with Montana's veterinarians and veterinary students, coupled with the state's need to revamp the number of livestock veterinarians in underserved areas—the Montana Cooperative Veterinary Medicine Program is aimed at fostering and rebuilding Montana's veterinarians for underserved communities.

At every turn, the program is designed by Montanans, and for Montanans. Current veterinary professionals and the state will have input into the program's curriculum, a summer hire initiative will be created for students for summer veterinary work in between academic years, and seniors in the program will have the option to complete required rotations with in-state private practices. Goals for the new program include rebuilding Montana's rural and food animal veterinary workforce, and provide Montana residents affordable access to a veterinary medical education.

The new cooperative will utilize MSU's state of the art animal facilities, including containment laboratories, MSU's Animal Bioscience Building and a soon to be renovated area in the Molecular Bioscience area. This area will house both the Veterinary Cooperative Veterinary Medicine Program and the recently expanded WWAMI program. Students will share a common lounge, some laboratory spaces, and lectures will be co-taught with the medical students when appropriate. These facilities will be used to instruct issues of biosafety, such as a host of infectious diseases present in livestock and wildlife as well as humans. To learn more about the Montana Cooperative Veterinary Medicine Program, visit http://mcvmp.montana.edu.

MSU begins Pre-Vet Medical Certificate

MSU's College of Agriculture now provides a certificate of pre-veterinary studies for students who want to apply to veterinary school. After gaining approval at the March 2013 Board of Regents' meeting in Helena, MSU associate provost and MSU's accreditation liaison officer submitted materials to the Northwest Commission on Colleges and Universities describing the mission and goals of the new Pre-Veterinary Medical Certificate. MSU received approval from NWCCU this past summer.

Students are required to complete 56-59 credits in biology, chemistry, math, physics, genetics and animal nutrition in order to receive the certificate. Students who have completed or are completing a baccalaureate in science or non-science undergraduate degrees will be able to map out an academic path that will qualify them to apply to any AVAM accredited veterinary school. ■

Talking Shop

Interim Dean Glenn Duff and Ron de Yong, director of Montana State Department of Agriculture sat down together and compared field notes

At the moment, what's the general feel of agriculture production in the state of Montana?

de Yong Agriculture is going through a major transition, it's getting diversified, and much more sophisticated with an emphasis on value-added. It's just a really exciting time. We've had some good prices for a few years and a lot of young people coming back who aren't afraid of new technology. They jump in with both feet, so, in a sense, the makeup of the industry is changing.

Duff Producers are using the information produced by faculty members now, so I think producers are getting more tied in with the College of Agriculture on the research side. Many producers have actually gone through our programs, so they've gotten to know our faculty members, and they understand that the college is place to utilize contemporary research.

How do the priorities and missions of the state Department of Agriculture compare to those of MSU's College of Agriculture?

de Yong We have a science division which watches over all of the regulatory aspects of production. They make sure product standards are there and producers are getting what they pay for. They make sure Montanans have clean water by making sure chemicals don't infiltrate ground water. We are also involved in exports and export certificates. We do the research and inspections for shipping to another country. On the other side, we do a lot of business development in terms of the diversification of agriculture, particularly in alternative crops.

Glenn Duff and Ron de Yong at Celebrate Ag.

Duff The College of Ag is supporting the mission of the land-grant university. We are the agriculture school for the state of Montana, so we're providing the education, research and Extension to the producers of the state. What we're ultimately doing is supporting the clientele of the state; we're educating the students, we're providing the needed research to keep producers viable and productive, and, lastly, we're using Extension to get the information out to the producers.

What postsecondary opportunities in agriculture do you see for MSU students?

de Yong The opportunities are greater than they've ever been before. Number one, there's more money in the production side and all the way through and that's good news for young people wanting to get into production. Because of the diversity in agriculture right now, there's a great need for young people and their expertise. From the technology side, to the science side and the marketing side, there's so much opportunity. If you're young and you're interested in anything related to agriculture and you like Montana, you have a real opportunity ahead of you in the future.

Duff We've got a great education system in Montana and there's ample opportunity to work together, which is reflective of the opportunities currently available for students in the larger network of agriculture. Montana is in a unique situation right now, and our students are poised to take on any challenge and answer any question about agriculture. When we look at the allied industries, our students don't have to necessarily be in agricultural production to make a difference. Those industries and opportunities are what run Montana, and they will continue to be the driving force in the state.

What advice would you give to a young person pursuing studies in agriculture?

de Yong When students come to the university, they need to develop a fondness for learning. When they graduate, they don't stop learning anymore. Things are evolving so rapidly, and there's so many changes taking place. If you can embrace the change and embrace learning, you will always have opportunities. From the business side, to agronomy, accounting, mechanics and livestock—it's enormous what you need to know. You're learning all the time. There's no tougher business than a family farm or family ranch, so it's a real challenge—but it's one that young people can thrive in.

Duff Our students are employable and that's key. We have to be able to continue to provide education to the student so that they will go out and be successful, and that will help the recruiting companies who will in turn keep coming back to MSU for their hires. A lot of the students when they come here, they love Montana, they're from here and they don't want to leave. We want to keep the student forces working in Montana, that's really going to help the state's economy. ■

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Listening to Students

College of Agriculture Students Garner more than $300,000 in Scholarships

"Recipients and their families and friends, scholarship donors and COA faculty and staff all came together to celebrate and recognize the scholarship recipients. We're lucky to have a constituency of alumni, friends and donors who recognize the need to support and engage the next generation of agricultural leaders," said Jessica Murdock, Student Services coordinator.

"It's become our own Oscar Night, in a way," said Nora Smith, assistant dean College of Agriculture/MAES. "Everyone seems to appreciate the opportunity to get dressed up, and to sit down and share a meal with our incredible donors. The event has grown so steadily in the past three years, we really are already looking forward to next September. The Banquet is a unique opportunity for students to express their gratitude directly to donors, and when you're sitting at the table with the family who is helping to finance your education, well, it turns into a great conversation."

Event Highlights

- Josh Pecukonis, Environmental Hort., event speaker received three awards
- Katelyn Dynneson, Ag Student Council pres., event speaker received two awards
- 370 in attendance at the banquet
- 167 students received one or more scholarships
- 100 unique scholarships were awarded
- $350,000 total distributed funds

Welcome,

Kevin Brown

New Development Director for the College of Agriculture, MSU Alumni Foundation

Kevin Brown graduated from The University of Montana School of Forestry in 1995 with a B.S. in Wildlife Biology. He brings over 17 years of nonprofit experience to MSU, including more than 13 years of fundraising experience. His experience includes event, major and planned gift fundraising for the Rocky Mountain Elk Foundation in many different capacities across the country including: regional director, senior regional director and director of development. After leaving the Elk Foundation in 2008, he became the executive director of the Big Hole Watershed Committee. He enjoys hunting, fishing, hiking and most everything in the outdoors of Montana. Kevin and his wife, Ami, have two boys, Declan and Garrett.

Keep up with the College of Agriculture on Facebook. Search for "College of Agriculture" or "MSU College of Agriculture."

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