

ANIMAL SCIENCES

Spring 2016

The Inside Scoop



WASHINGTON STATE  UNIVERSITY

APPLIED RESEARCH • EXTENSION & OUTREACH • INNOVATION & TECHNOLOGY • TEACHING

ANIMAL SCIENCES:

Moving Forward

Welcome to the yearly update from the Department of Animal Sciences! We have a lot to be thankful for, including our outstanding students, our hard-working and dedicated faculty and staff, and our engaged and supportive alumni and friends. This year we need to especially thank three members of the faculty – Dr. Margaret E. Benson, Dr. Michael V. Dodson and Dr. John P. McNamara – who will be leaving our ranks.

Dr. Benson gave the department eight and a half years of excellent leadership as chair and facilitated excellence in our teaching, research, and outreach programs. Margaret decided last fall to step back to the

faculty ranks and will remain there until she leaves WSU in 2017. She continues to make contributions through teaching and is working on some special projects that she has wanted to accomplish for several years. We very much appreciate the time, dedication, and energy she has given to the department.

Dr. Michael V. Dodson, professor, retired from the department this year as well. Dr. Dodson is a nationally recognized muscle biologist and a caring teacher. Not only will he be remembered as one of the most demanding teachers in the department, but also as one of the most dedicated to student learning. Dr. Dodson had a safety net for any student who was struggling in his class and would work with them until they learned the material. It is already strange to walk by his office early in the morning and not see several students waiting to see him. We thank Mike for all of his years of dedicated service and wish he and his wife, Sabine, much fun in their retirement.

Dr. John P. McNamara, professor, also transitioned to retirement this fall. Dr. McNamara's contributions to the department span from his nationally recognized lactation biology research to his long-time commitment to WSU students. We are very grateful for his devoted service to our department, students, and dairy program and wish he and his wife, Sue, great times with their children and grandchildren. Please mark your calendar and plan to attend John's retirement party at Zepoz in Pullman on May 22, 2016. Please contact Larry Fox (fox@wsu.edu) if you have questions.

I hope you enjoy this year's copy of *The Inside Scoop*. Thank you all for supporting our department and please keep in touch.

Go Cougs!

Dr. Kristen A. Johnson

Professor and Interim Chair,
Department of
Animal Sciences

BIG SCOOP WINNERS!

Animal scientists know great ice cream when they taste it! Washington State University was awarded the hotly contested Big Scoop Award for best ice cream in the country last summer at the ASAS-ADSA Joint Annual Meeting.

Members of the American Society of Animal Science overwhelming preferred WSU Huckleberry Swirl ice cream over competition from the University of Connecticut and Utah State University.

Margaret Benson submitted the ice cream, knowing we wouldn't lose because the department's students help manage the cows that produce the high-quality milk used by the WSU Creamery to make cheese and ice cream.

The Big Scoop trophy is on display in the department lounge, where it will stay until it travels to the next winner.

The department also received \$1,000 in prize money that will be used to enhance student experiences.



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The Inside Scoop

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We invite you to visit us in person or online.

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Cover photo: Bailey Baltazar checks on SSC pigs

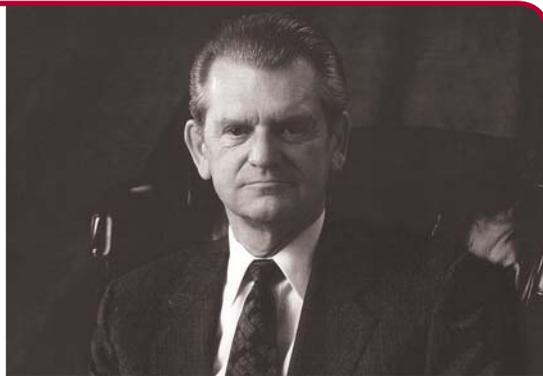


Send your latest Animal Sciences news to:

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A STORIED CAREER IN THE DAIRY INDUSTRY

Former Darigold President & CEO looks ahead to the future



Earlier this year, two antique milk bottles were generously donated to the department by Wesley Eckert, a 1957 graduate of Washington State College (WSC) and former president and CEO of Darigold, one of the largest farmer-owned dairy cooperatives in the United States. These small glass bottles, emblazoned with a crimson WSC shield that has evolved to the current and well-recognized WSU

shield of today, are superb examples of what the then-Department of Dairy Husbandry used to package milk.

Eckert grew up in south central Alaska, north of Anchorage, where his family raised dairy cattle and farmed. He began his

burg as a quality assurance manager. Four years later, Eckert became sales manager for central Washington, and was then promoted to general manager in 1964. He was transferred to the Philippines in 1968 where he served as manager of a plant that

“There is a great future for young people entering the dairy industry,” Eckert said. “But, students must be prepared. Modern dairy farms are large, very sophisticated, and are major corporations themselves. Dairy processing plants are huge, computerized, and very efficient. Therefore, to get a start in any facet of the dairy industry, a good, science-based education is key to success. But, also keep in mind that companies don’t want to hire single-minded people. They want employees who are articulate, have good management skills, are well versed in technology, and have a broad background. Take courses in economics, accounting, history, and social sciences, and get involved in activities outside of the classroom.”

After retiring from Darigold, Eckert volunteered his expertise to two dairy projects in Ukraine and one in Ethiopia. Now he is enjoying retirement with his wife, Joanne, who graduated from WSC with a degree in education. Together, they raised three sons and have seven grandchildren and three great-grandchildren. They keep active with outside activities and have enjoyed traveling.

“To get a start in any facet of the dairy industry, a good, science-based education is key to success.”

formal education at the University of Alaska, and transferred as a junior to WSC where he earned a BS degree in dairy manufacturing. During the summers when he wasn’t in school, Eckert worked in dairy plants in Alaska and Ellensburg, Washington.

After graduating from WSC, Eckert served two years of active duty in the Army. In 1959, he began a 39-year career with Darigold when he returned to Ellens-

produced canned evaporated milk and sweetened condensed milk. Eckert returned to the U.S. in 1974 and became production manager of 13 Darigold plants in California, Idaho, Oregon, and Washington. He played key roles in research and development, engineering, and quality control. He also developed technical service agreements overseas before serving as Darigold president and CEO from 1990 to 1998.

Throughout his long and illustrious career, Eckert played key roles in the evolution of the modern dairy industry. He offered several words of advice to students who aim to be future leaders of the dairy industry.





WHAT A DOGGONE GOOD JOB!

Julianne Ubigau
& a former shelter
dog help study
endangered wildlife

Several times a year, Julianne Ubigau (BS, AnSci '05) packs enough gear to last a few weeks, grabs some tennis balls, and heads out into the wilderness with her dog, Sampson. They have a job to do!

Sampson is a scat-sniffing dog and Ubigau is his handler. Sampson's main objective is to find scat (feces) left by wildlife in their natural environment. When Sampson alerts Ubigau that he has found scat, she rewards him with a toss of a ball for a job well done. She also records the location of the pile and takes a sample for later testing.

Both work for Conservation Canines (CK9), part of the University of Washington's Center for Conservation Biology founded in 1997 by Samuel Wasser, who came up with the idea to use dogs to find scat. Almost all of the CK9 dogs, including Sampson, come from animal shelters. Previously considered unadoptable, these high-energy, play-oriented dogs are now contributing to the understanding of wildlife species all over the world.

Why study scat?

Scat can be used to non-invasively study endangered species in their native habitats. An abundance of information can be extracted from animal droppings. Researchers can determine what the animals are eating and when their diets change. The location of the pile can be used to estimate the number and distribution of animals in an area. Genetic tests identify individual animals and hormone analyses reveal the sex of the animals and indicate if they are stressed or pregnant.

Ubigau, who was raised in the Seattle suburbs, has always loved animals, agriculture, and wildlife. She was heavily involved in 4-H throughout her youth, and even raised chickens in her backyard, although it was against city ordinances. "My family thought I was weird," Ubigau said, because they couldn't relate to her interests.

Wanting to learn more about animals and agriculture, Ubigau came to WSU to get a degree in animal sciences. "I loved animal sciences, especially Dr. Senger's Physiology of Re-

production class," Ubigau said. "And, I appreciated how Dr. McNamara let me volunteer in his lab so I could get some experience in research. Most of all, I thank Dr. Johnson for her guidance and encouragement."

As an undergraduate student, Ubigau never envisioned she would be earning a living tromping around in the wild looking for wildlife feces. But, when she saw an advertisement for a position that required someone who had experience with dogs and could live and work long hours in a remote area in subzero temperatures, she knew she was the person for the job. "I have always been interested in wildlife research and I love the outdoors," Ubigau said. "I actually didn't get called for an interview until they were hiring the second round of people. I had to show the interviewers that I could communicate well with dogs, so they asked me to retrieve a ball from a dog, which I later discovered was the craziest dog in the program. I was rolling around in the mud trying to get that ball back, which I never did. I was sure I had failed." However, she did get the job because she was patient, upbeat, and made it fun for the dog – exactly the type of person that CK9 wanted to employ!

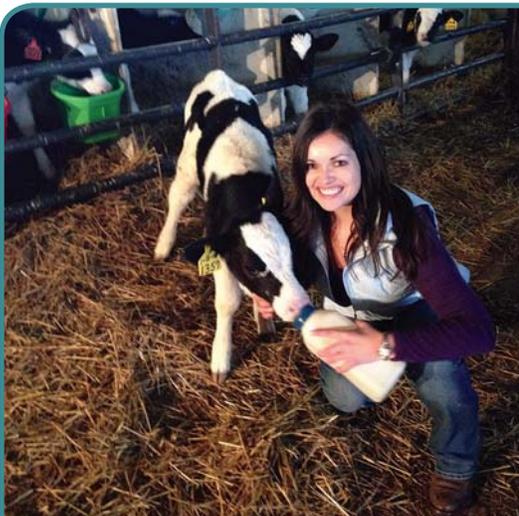
An animal scientist in Canada

Ubigau's first big project sent her to the Alberta oil sands to collect caribou, moose, and wolf scat, which was then used to study the effects of wolf predation, habitat loss, and human activity on those ungulate populations. Currently, Ubigau is involved in a study located in northeastern Washington examining the dynamics of wolf recovery on wildlife populations. Wolf recovery efforts are certainly controversial; Ubigau's background in animal sciences is an added bonus as she seeks to help mitigate the wolf-human-livestock conflict in the area.

When she isn't out in the field, Ubigau is spearheading CK9's outreach education program. "We are using our friendly, retired dogs to connect kids to science," Ubigau said. "This program fuses two of my greatest passions – education and wildlife research."

PAYING IT FORWARD

Kimmi Devaney offers valuable advice to current and future students



Dear Dairy College Student,

It's now been nine years since I moved 300 miles across the state to begin my college career at Washington State University. I'd like to think I was fearless, but I was more than a little nervous.

A lot of older students and alumni gave me advice during my four and a half years in Pullman and in the spirit of paying it forward, I hope it helps current students.

Good things happen when people know who you are and what you can do.

Along those lines, collect business cards.

You don't need to know everything.

But learn everything you can.

Don't be afraid to move.

Stay involved after graduation.

Network, network, network!

Don't wish away anything.

Pay it forward.

Kimmi Devaney

Reprinted with permission from Kimmi Devaney. Visit her blog at kimmisdairyland.com to read the entire letter.



Kimmi Devaney (BS, AnSci '10) grew up on her family's retired dairy farm in Enumclaw, Washington. Her passion for the dairy industry began with the purchase of her first show heifer, a Holstein named Allie. Her zeal further developed as she shared her love of the industry with consumers of all ages when she was the 2005 Dairy Princess of King and Pierce Counties.

Devaney loves to write and in high school dreamed of someday writing for a national dairy magazine. When she came to WSU in fall 2006, she enrolled as a journalism

A little more than three months after graduation, while running the inaugural meeting of the Western Region ADSA – SAD (American Dairy Science Association – Student Affiliate Division), Devaney received an offer for her dream job, producer relations coordinator for the Indiana dairy checkoff. Since then, she has also worked as a field representative for Dairy Farmers of America and as a consultant for both the Washington State Dairy Products Commission and Rite in the Rain.

Devaney is now agricultural marketing and industry develop-

“THERE ARE A LOT OF PEOPLE WHO . . . ARE MORE THAN WILLING TO LISTEN AND PROVIDE SOME GUIDANCE. . . .”

ment manager for the Indiana State Department of Agriculture where she helps livestock producers with biosecurity and emergency planning, teaches public relations to farmers, and works on livestock, advocacy, and agritourism programs. In her free time, Devaney is a public relations chair on a county Farm Bureau board, milks cows, writes a dairy blog (kimmisdairyland.com), and is a freelance writer for Progressive Dairyman magazine.

major, but later switched to animal sciences with a minor in agricultural communications. Outside the classroom, she got involved in many dairy-related activities such as Dairy Club and CUDS. Reflecting on her experiences at WSU, Devaney said, “Enjoy your time in Pullman. I so often wish I could go back and relive those experiences.”

Despite months of searching for a job, Devaney didn't yet have an offer when she graduated in December 2010. Looking back on this stressful time, Devaney advises, “Students, please know that if you find yourself in the same situation that it will be okay. Use your connections. This is another reason why networking is extremely important in college. Don't feel alone. There are a lot of people who have been in your shoes (like me!) and are more than willing to listen and provide some guidance if you need it.”

Looking back on her experiences at WSU, Devaney has so much advice to share with students, a lot of which is detailed in her blog, “Dear College Dairy Student,” posted on September 8, 2015. “My most important piece of advice is to give back,” Devaney said. “There will be a lot of people that make a difference in your life in college and afterwards. Make sure you make an effort to be one of those people for someone else someday.”

DOES HOUSING TYPE AFFECT CALF STRESS LEVELS IN HOT WEATHER?

Heather Young seeks answer with self-designed research project

One never knows when a chance encounter or experience might lead a person down a new path. Last year, when Heather Young was a freshman, she saw an announcement for a presentation to be given by Dr. Don Höglund, a veterinarian and animal handling and training specialist. Maybe it was his extensive experience training horses that enticed Young to the seminar, but it was his passion for helping dairy farmers learn how to understand animal behavior and use that knowledge to move cows humanely and safely that intrigued her, and led her to the informal gathering between the veterinarian and students after the seminar. Young asked Höglund, who had piqued her interest, how to get involved in animal behavior research. He suggested she talk with Dr. Amber Adams Progar, one of the department's assistant professors, who is investigating how dairy production practices affect animal health, well-being, and performance.

Young met with Adams Progar as Höglund suggested and started working for her in January 2015, helping with lab set up and learning to tabulate animal behaviors captured on video. Young was excited about the behavioral aspect of Adams Progar's studies, and was keen to design and conduct her own research project. She pitched an idea – how does housing type affect the health, growth, and well-being of calves when they are heat stressed? Adams Progar was impressed with Young's initiative and helped fine tune the experimental design. A grant from the CAHNRS Internship Program provided a summer stipend and helped cover some expenses.

With temperatures soaring into the 90s and higher, the summer of 2015 handed Young the perfect conditions to study heat stress in calves at the university dairy. Unfortunately, the number of heifer calves born within the study's time frame was lower than expected.

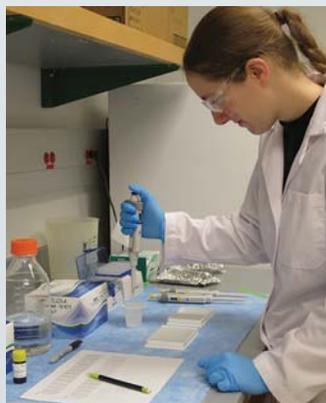
Young housed eight calves in a stall and three in individual calf hutches for six weeks after they were separated from their dams. She measured temperature and relative humidity in each location and used the data to calculate the temperature-humidity index, or heat index. She also measured calf body temperatures, collected body weights and blood samples, and compiled video footage inside and outside the hutches.

She is currently analyzing the concentrations of the hormones cortisol and thyroxine in the blood samples she collected and will use the data to estimate the calves' stress levels. Video footage will be used to determine the amount of time each day the calves spent eating or drinking, and standing or laying. She expects to find that the calves housed in the stall were less stressed by heat than calves that lived in hutches, due to better ventilation. She will present the results of her initial research at the Showcase for Undergraduate Research and Creative Activities (SURCA), a WSU-wide event on March 28, 2016.

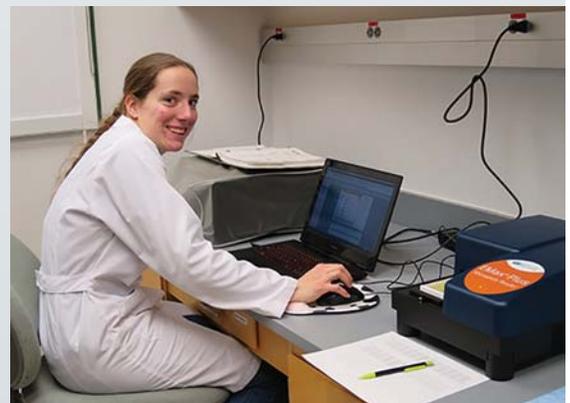
Double majoring in animal sciences and Spanish, Young has plans to become a large-animal or mixed-practice veterinarian. In the short term, she will put her Spanish skills to the test in early May when she leaves her hometown of Vancouver, Washington, and travels to Ecuador where she will take intensive Spanish-language classes and be immersed in the culture of the Ecuadorian people. She will also participate in experiential activities with local professionals and travel to the Cloud Forest and to a living laboratory in the Galapagos. After she returns to Pullman in June, she will repeat the calf heat stress experiment at the university dairy and hopes to collect enough data to supplement results from last summer's study so she can write and publish a scientific paper. She will also be busy working shifts at the dairy as one of the newest members of CUDS.



Young fits a calf with a halter outside a calf hutch



Preparing a hormone assay



Recording the results of a hormone assay

BETTER THAN A TEXTBOOK

Internship in Minnesota taught Camille Ogdon all about the swine industry

“Seeing and learning about an industry in real life is better than a textbook . . . I highly recommend it.”



The best way to learn about pig production is to jump in, boots first, and get involved in all aspects of a farrow-to-finish swine operation. That is what Camille Ogdon, a junior in animal sciences, did last summer. Ogdon, who grew up in Normandy Park, a suburb of Seattle on the shores of Puget Sound, wants to be a large-animal veterinarian. Coming from an urban background, Ogdon had minimal experience in production-animal agriculture or large-animal medicine, and knew she needed real-world experience to cement her career choice and increase the competitiveness of her eventual vet school application.

Although Ogdon's immediate family members don't relate well to her interest in animal sciences or veterinary medicine, they are completely supportive and suggested she talk with relatives who own and operate a large swine production facility in the Midwest. After several phone conversations, Ogdon secured a summer position at the farm about an hour and a half south of Minneapolis and worked there for 2½ months.

Immediately upon arrival at the swine production facility, Ogdon learned why biosecurity is vitally important in production-animal agriculture. Pigs at the farm were battling an outbreak of the virus that causes Porcine Reproductive and Respiratory Syndrome, or PRRS.

The economic ramification of a PRRS outbreak to swine producers is grave. Gestating sows infected with the PRRS virus may abort litters or give birth to stillborn or mummified piglets, while infected piglets suffer from respiratory disease, exhibit lower average daily gains, and have higher mortality rates. Unfortunately, a highly effective vaccine has yet to be developed. Therefore, swine producers must rely on stringent biosecurity protocols to reduce the risk of PRRS transmission and eliminate the virus from a facility.

“The farm had strict biosecurity rules,” Ogdon said. “New gilts were not allowed to enter the farm for at least 250 days, all rooms were sanitized, and we could not freely go between farrowing, nursery, and finishing barns.”

Ogdon spent some days in the farrowing barn, helping to deliver piglets. She made sure the piglets were dry and placed under heat lamps. She also helped weigh and castrate piglets, and dock tails.

“Because of measures enacted to decrease PRRS virus transmission between piglets, we couldn't use a cart to move piglets around. This made processing a little challenging, but I quickly learned how to work around the problem,” Ogdon said.

In addition to her work in the farrowing barn, Ogdon also learned how to collect and process semen for artificial insemination, and how

decisions were made to cull animals from the herd. She also spent a little time at a neighboring dairy farm.

One of the highlights of the summer was a trip to World Pork Expo in Des Moines, Iowa. “I had a great time there,” Ogdon said of the world's largest pork-specific trade show. “I learned what new technologies are available for detection of ovulation and how to enhance biosecurity. And, there was LOTS of delicious barbecued pork!”

“Getting out of your comfort zone is good for you,” Ogdon said of her experience. “Seeing and learning about an industry in real life is better than a textbook, and it allows you to explore new and different places. I highly recommend it.”

Ogdon was enthusiastic about applying what she learned last summer as an intern at the pig farm and was eager to learn more about pigs and the swine industry. So she joined the WSU Student Swine Cooperative (SSC), a group of students who run a small grow-to-finish pig enterprise on the Pullman campus (see story on next page).

This summer Ogdon will add more hours of veterinary experience to her resumé. She is currently lining up a summer job as a veterinary assistant at Priceless Pet Clinic in her hometown where she will have ample opportunity to observe and assist with surgeries and care of small animals.



STUDENT SWINE COOPERATIVE

Building skills and gaining practical experience in swine management

The Student Swine Cooperative (SSC) was established as a means to educate members about the swine industry through hands-on, practical learning experiences. Members own and manage a small herd of pigs, and are responsible for all management, financial, and marketing decisions.

The organization was recently overhauled and restructured. Members are now operating from a new location on campus where they finish two groups of 10 pigs each year. The cooperative purchases pigs weighing about 130 pounds from a producer in the state and they are delivered to campus early in the fall and spring semesters. When the pigs arrive, a WSU veterinarian checks them to

ensure they are healthy. Members then weigh, deworm, and give each pig a booster vaccination.

Current SSC members, Nicole Rogers (president), Bailey Baltazar (herds manager), Katelyn Vander Weide (secretary), Kimberly Cirillo (treasurer), Farrahn O'Hara (marketing cuts and wraps officer), Shannon Trepus (education officer), Camille Ogdon (technology officer), and Natasha Moffitt (student advisor), work together with guidance from faculty advisor Dr. Jan Busboom to raise pigs to a market weight of about 260 pounds.

"We feed our pigs a standard corn-soybean meal-based finishing diet that does not contain any growth promoters," Moffitt said. "We want the pigs to gain about 2

pounds per day so they reach market weight before the end of each semester.”

The cooperative is completely self-sustaining. Pigs and feed are purchased with funds raised from previous pork sales. When pigs reach market weight, they are harvested at the department’s Meat Science Laboratory. “We presell all of our pigs,” O’Hara said. “People can choose to buy a whole or a half pig and specify how they want the pork cut and wrapped.” Pork can only be delivered locally; however, members have distributed product to other locations around the state when they leave Pullman for holiday breaks.

Bacon sales a huge success

This year SSC members implemented bacon sales as a new fund-raising activity. With help from Meat Science Lab manager Dan Snyder they purchased pork bellies and learned how to smoke, cut, and wrap bacon. Response to their sales advertisements was overwhelming and they sold their entire 200-pound inventory of bacon in December! Because demand was so high, SSC members will use their newfound skills and have bacon for sale again later this spring.

SSC members are serious about learning all they can about pigs, and look for educational opportunities outside their own pig enterprise. Education officer Trepus coordinates self-education within the co-op by suggesting each student give a short presentation at a weekly meeting about a topic relevant to the swine industry, arranges for tours of local pig farms, and plans outreach activities with local 4-H and FFA members. In addition, SSC members attend Swine Information Day in Moses Lake thanks to monetary support from Sarah Smith, WSU Extension regional animal sciences specialist. At the seminar they attend presentations related to meat safety, swine market outlooks, and pig health issues, and have the opportunity to network with and learn from other pork producers.

How to join SSC or purchase pork

“Pigs are so cool,” Ogdon exclaimed! “As technology officer, I manage our website and Facebook page where we advertise our pork sales and post our application for new members.” Students from any major who are interested in pigs and learning more about the swine industry are encouraged to apply. For more information about joining SSC or purchasing pork, send an email to wsustudentwincooperative@gmail.com or visit their webpage at washingtostatessc.wordpress.com.

Top: SSC members weigh and vaccinate pigs

Second from top: Camille Ogdon and Nicole Rogers package bacon

Third from the top: SSC pigs and facilities

Bottom: 2015-16 SSC members

Back row (L to R): Katelyn Vander Weide, Farrahn O’Hara, Camille Ogdon, Natasha Moffitt

Front row (L to R): Bailey Baltazar, Kimberley Cirillo, Shannon Trepus, Nicole Rogers



Undergraduate clubs



BLOCK AND BRIDLE (B&B)

email: wsubnb@gmail.com



COMPANION ANIMAL CLUB (CAC)

email: companionanimalclub@gmail.com



COLLEGIATE HORSEMEN'S ASSOC. (CHA)

email: wsucollegiatehorsemens@gmail.com



DAIRY CLUB

email: fox@wsu.edu



HORSE POLO SPORT CLUB

email: wsupolo@yahoo.com



PRE-VET CLUB

email: wsupvc@gmail.com

JOINING A CLUB IS A GREAT WAY TO MEET PEOPLE WITH SIMILAR INTERESTS!

There are several student organizations based out of the department or the university that cater to interests specific to students in animal sciences. Students who are interested in learning more about animal agriculture can join B&B, while those who are passionate about companion animals and community service can become members of CAC. Anyone interested in horses and the horse industry can join CHA. Dairy Club is perfect for those who are enthusiastic about dairy products, dairy animals, and the dairy industry. Students who love horses, enjoy fast-paced action, and like to have fun might want to participate in the WSU Horse Polo Sport Club, and anyone who aspires to become a veterinarian can join the Pre-Vet Club. Many of the students involved in these organizations for the 2015-16 academic year are pictured above.

HANDS-ON LEARNING EXPERIENCES

The Department of Animal Sciences has three cooperatives that undergraduate students can join and learn firsthand about different animal industries.

Members of the **Cooperative University Dairy Students (CUDS)** manage a working dairy herd of about 35 Holstein cows, plus young stock and dry cows.

Cougar Cattle Feeders (CCF) is a cooperative designed to teach students about feedlot management.

Participants of **Student Swine Cooperative (SSC)** manage a small, grow-to-finish pig enterprise.

For more information about our cooperatives, visit the website: www.ansci.wsu.edu/clubs/. See page 6 of this issue for a detailed story about SSC.



CUDS

email: cuds@lyris.cahnr.wsu.edu



CCF

email: nelsonm@wsu.edu



SSC

email: wsustudentsswinecooperative@gmail.com

2015 DAIRY CHALLENGE TEAM WINS FIRST PLACE IN NY!

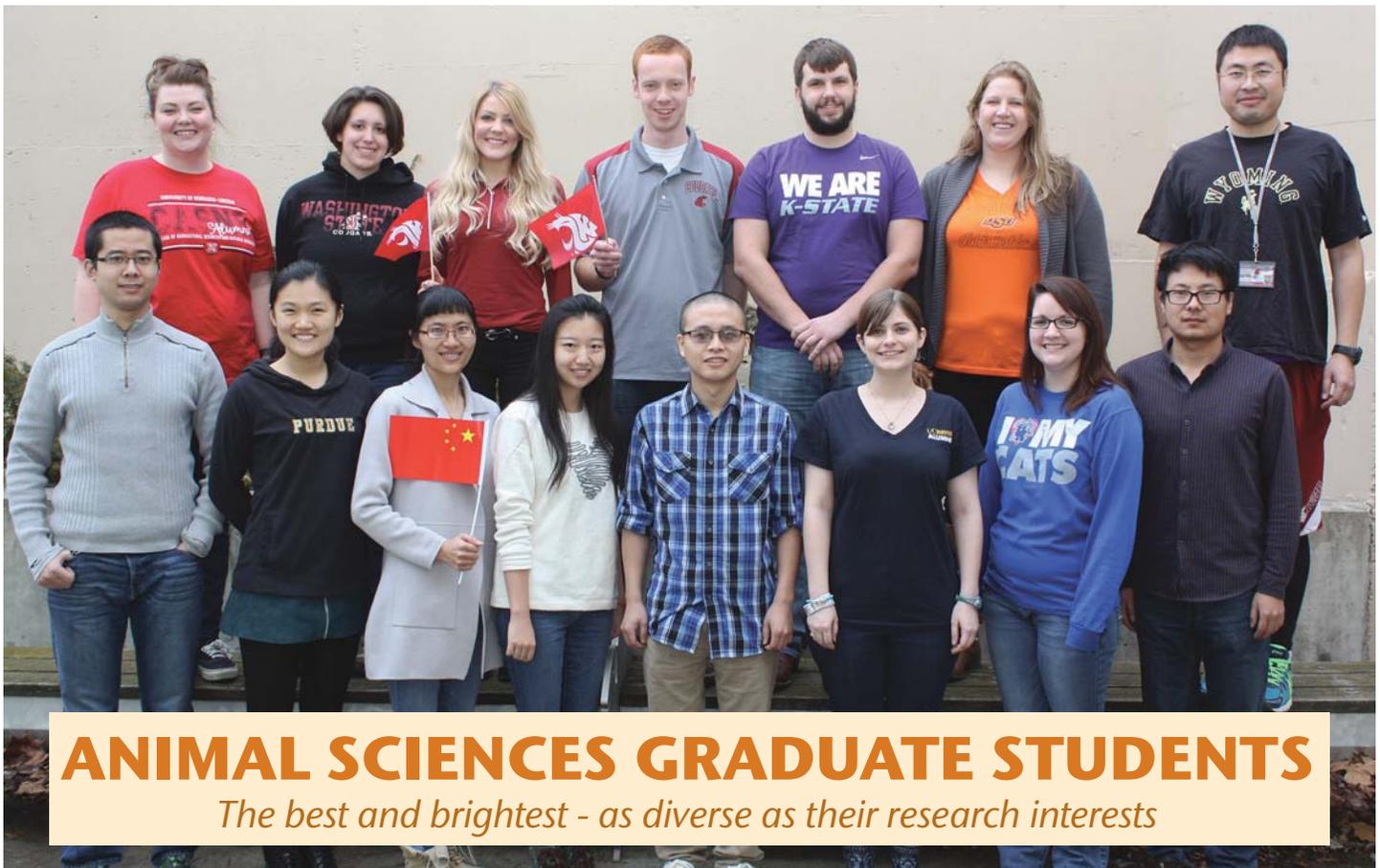
Last year's issue of *The Inside Scoop* went to press before we could report on the outstanding performances of then-senior animal sciences students, Joe Britt, Megan Cihak, Landon Macy, and Kelby Stadt at the North American Intercollegiate Dairy Challenge held in April 2015 in Syracuse, New York.

The team worked together to solve problems and provided recommendations on nutrition, animal health, reproduction, milking procedures, housing, and financial management for a working dairy farm. The principles learned in the animal sciences curriculum and hours spent practicing with coach and WSU dairy manager John Swain paid off when judges presented the Platinum Award to the WSU team.

In addition to placing first in a competition with 270 of their peers, each member of the WSU team received a \$200 scholarship.



From left to right: Joe Britt, Megan Cihak, Landon Macy, advisor John Swain, and Kelby Stadt. Photo courtesy of NAIDC.



ANIMAL SCIENCES GRADUATE STUDENTS

The best and brightest - as diverse as their research interests

Back row (L to R): Elizabeth Keuter, Corrine Harris, Andrea R. Smith, Jacob Mutch, Ely Walker, Hannah Chiapetta, Qiyuan Yang
 Front row (L to R): Rui Li, Xiaoyu Wen, Guiling Ma, Shuwen Zhang, Bo Wang, Katie Hilt, Jessica Lowe, Yanting Chen
 Not pictured here: Lindsay Madden Ellsworth, Mahesh Neupane, Sophie Trombetta (see photo on facing page)

Yanting Chen

Degree, advisor: PhD, Harrison
 Hometown: Northwestern China
 Alma maters: Jinlin Univ.;
 China Agricultural Univ.
 Research focus: Improving feed efficiency, milk production, and health of primiparous dairy cows.

Hannah Chiapetta

Degree, advisor: PhD, Harrison
 Hometown: Petaluma, California
 Alma mater: Oklahoma State Univ.
 Research focus: Life cycle assessment of by-product feeds used in lactating dairy cow diets.

Lindsay Madden Ellsworth

Degree, advisors: PhD, Johnson and Newberry
 Hometown: Seattle, Washington
 Alma mater: Western Washington Univ.
 Research focus: Investigating the human-animal interaction on life skills and well-being of youth involved in dog activities.

Corrine Harris

Degree, advisor: MS, Nelson
 Hometown: Buckley, Washington
 Alma mater: Washington State Univ.
 Research focus: Determining how zinc finger protein 423 affects intramuscular adipogenesis in beef cattle.

Katie Hilt

Degree, advisor: MS, Harrison
 Hometown: Vacaville, California
 Alma mater: Univ. of California – Davis
 Research focus: Decreasing the cost of producing dairy struvite, a fertilizer.

Elizabeth Keuter

Degree, advisor: MS, Neibergs
 Hometown: Gilbert, Arizona
 Alma mater: Univ. of Nebraska – Lincoln
 Research focus: Investigating the genetic influences on infertility and early pregnancy loss in dairy cattle.

Rui Li

Degree, advisor: PhD, Jiang
 Hometown: Nanjing, China
 Alma mater: Nanjing Agricultural Univ.

Research focus: Characterizing alternative polyadenylation, structural diversity, and expression dynamics of genes in *Xenopus tropicalis*.

Jessica Lowe

Degree, advisor: MS, Fox
 Hometown: Belfry, Kentucky
 Alma mater: Univ. of Kentucky
 Research focus: Optimizing mycoplasma culture conditions to improve sensitivity of detecting mycoplasma mastitis.

Guiling Ma

Degree, advisor: PhD, Harrison
 Hometown: Shandong, China
 Alma maters: Shandong Agricultural Univ.; China Agricultural Univ.
 Research focus: Examining the effects of adding rumen inert fat and potassium to lactating dairy cow diets on milk composition and production.

Jacob Mutch

Degree, advisor: MS, Johnson
 Hometown: Duvall, Washington
 Alma mater: Washington State Univ.

Research focus: Improving beef cattle feed efficiency through genomic selection.

Mahesh Neupane

Degree, advisor: PhD, Neiberger
Hometown: Kathmandu, Nepal
Alma mater: Institute of Agriculture and Animal Sciences
Research focus: Identifying genetic loci associated with susceptibility of cattle to bovine respiratory disease complex.

Andrea R. Smith

Degree, advisor: MS, Pru
Hometown: Kennewick, Washington
Alma mater: Washington State Univ.
Research focus: Understanding transcription factors that regulate uterine cell proliferation and differentiation.



Sophie Trombetta

Sophie Trombetta

Degree, advisor: MS, Du

Hometown: Plano, Texas
Alma mater: Kansas State Univ.
Research focus: Investigating the offspring effects of excess circulating leptin in mouse mothers fed a high-fat diet.

Ely Walker

Degree, advisor: MS, Llewellyn
Hometown: Altoona, Kansas
Alma mater: Kansas State Univ.
Research focus: Evaluating the use of winter canola for feed and seed production.

Bo Wang

Degree, advisor: PhD, Du
Hometown: Yuan Jiang, China
Alma mater: China Agricultural Univ.
Research focus: Understanding how maternal dietary components affect subsequent fetal adipose development.

Xiaoyu Wen

Degree, advisor: MS, Adams Progar
Hometown: Jinan, China
Alma maters: China Agricultural Univ.;

Purdue Univ.
Research focus: Examining the usage of calf jackets during cold weather on subsequent calf growth and health.

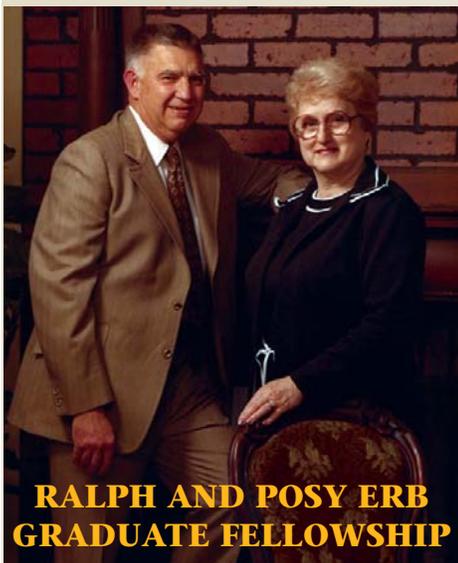
Qiyuan Yang

Degree, advisor: PhD, Du
Hometown: Xi'an, China
Alma mater: Southwest Univ. for Nationalities
Research focus: Studying the development of adipocytes to help understand the mechanisms that contribute to obesity and type 2 diabetes.

Shuwen Zhang

Degree, advisor: PhD, Jiang
Hometown: Bengbu, China
Alma mater: Northwestern A&F Univ.
Research focus: Examining how alcohol treatment affects gene expression in rat brain tissue.

DOWN PAYMENTS ON FUTURE SCIENTISTS



RALPH AND POSY ERB GRADUATE FELLOWSHIP

"We see the graduate fellowship as a way to help young scientists for generations to come."

~Erb family

Educating the next generation of animal scientists is the foremost goal of the Animal Sciences Department. We aim to recruit excellent scholars from all over the world to our graduate programs. In many cases, our peer institutions are recruiting the same students. Resources, such as those provided by the Ralph and Posy Erb Graduate Fellowship, allow us to grant top-off awards in addition to graduate student assistantships, which provide us a competitive edge in attracting outstanding scholars. "Our graduate program is strengthened by this fund, which enables us to recruit the very best," said Holly Neiberger, department graduate coordinator.

Ralph E. Erb earned a doctorate in animal science from Purdue University after World War II. He then accepted a position in the Department of Dairy Husbandry at Washington State College, where he built a national reputation for his research in reproductive physiology. Fifteen years later, he returned to Purdue University where he worked until his retirement in 1978. Throughout

his career, Ralph was known as an outstanding mentor and for his passion for training graduate students to succeed in their degree programs and future careers.

The Ralph E. Erb endowment was established after his death in 1983. In 2009, after the death of Ralph's wife Posy, their son George renamed the endowment to recognize and honor the Erb family's commitment to education and devotion to mentoring young people in science.

"The Erb family is proud of its ties to Washington State University and deeply committed to the success of the Department of Animal Sciences and all of its students," said George. "We see the graduate fellowship as a way to help young scientists for generations to come. We want the same things as my father. We want all of the department's graduate students to succeed, and we want them to keep advancing and applying the science. Although the fellowship's grants are just modest down payments on that future, as the years stream by, the benefits will multiply beyond our imaginations."

INSIGHTS IN COMPARATIVE ANIMAL NUTRITION

Annual Halver Lecture brings expert Mark Edwards to Pullman



Mark Edwards, PhD, associate professor at California Polytechnic Institute and former animal nutritionist for the San Diego Zoo and Wild Animal Park and the Smithsonian National Zoological Park, shared his insights in comparative animal nutrition with students and others in Pullman at the annual John E. Halver Lecture last October.

Edwards's ultimate goal is to enhance animal health and well-being by understanding how an animal's habitat might influence its dietary requirements. He discussed how many of the giant pandas at the San Diego Zoo suffered digestive upsets prior to his tenure there. Giant pandas technically are considered omnivores and so their diets had been formulated to contain protein and fat. In actuality, a panda's digestive system is highly specialized and its diet in the wild is almost 100 percent bamboo. When Edwards modified the pandas' diet and added more bamboo and fiber, which more closely mirrored ingredients available in their natural environment, digestive upset was effectively eliminated and reproductive efficiency and survivability increased.

Edwards also explained that a solid foundation in livestock animal nutrition is key to understanding the digestive systems and nutritional requirements of wild animals. For example, studies of horses, which are hindgut fermenters, have provided the basis for nutritional recommendations in endangered species like rhinoceros and elephants, which have similar digestive systems. Similarly, diets formulated for giraffes have been based on work done on cattle.

After the seminar, Edwards gathered informally with students in the Clark Hall reading room and answered questions about comparative animal nutrition and careers in the field.

The Halver Lecture is funded by an endowment established by the late John E. Halver, a nutritional biochemist who earned a BS degree in chemistry in 1944 from then-Washington State College. Lauded as a pioneer and leader of research in comparative nutrition, Halver was passionate about educating students in the field.



Top: Mark Edwards presenting his talk about comparative nutrition to students in Johnson Hall

Middle: Students listen to Mark Edwards's advice about careers in comparative nutrition in the Clark Hall Reading Room

Bottom: Mark Edwards answers questions posed by students



Dr. M.V. Dodson retired as a professor emeritus at the end of the 2015 fall semester, after a career spanning more than three decades in the Department of Animal Sciences at WSU. Dodson contributed substantially to the scientific fields that focus on the involvement of skeletal muscle stem cells in myogenesis and adipogenesis, and was instrumental in the establishment of the field of myogenic satellite cell research using meat animals, wild animals, and fish as model systems. Furthermore, Dodson's research demonstrated that adipocyte dedifferentiation was real, which led to a whole new field of study with numerous participants.

Dodson collaborated with scientists and teachers worldwide, with a successful "team approach" philosophy, and shared observations and data, authorship on writing efforts, and credit for successes, making substantial progress, even during periods when funding was nearly non-existent. In a balanced approach, Dodson also contributed to the fields of teaching, advising, and learning with numerous papers, teaching tips, career advice, and perspectives papers. Dodson has contributed to more than 200 publications, which have been cited more than 8,000 times. Although he is retired, Dodson has plans to publish 10 to 20 additional papers in the near future.



John McNamara, professor emeritus and fellow of the American Dairy Science Association, retired in 2015, after a 33-year career in the Department of Animal Sciences at WSU. McNamara is known internationally as a leader in adipose biology and energy metabolism. His foundational work focused on metabolic control, particularly in adipose tissue, helping to develop the field of nutri-

tional physiology. He and his colleagues established a body of knowledge on energetics, efficiency, and transcriptomic regulation of adipose tissue. He continues to work on systems models of metabolism, integrating genetic, nutritional, and reproductive control to identify the most efficient patterns of metabolism. He helped develop two new classes, an introductory pet nutrition course and a senior level companion

animal management class. He wrote and published *Principles of Companion Animal Nutrition*, now in its second edition and the core of several new animal sciences courses. He procured more than \$3 million in extramural support, mentored 15 graduate students and hundreds of undergraduate students, published more than 200 peer-reviewed papers, served for 16 years as advisor to Cooperative University Dairy Students, and received numerous awards for excellence in research and teaching from the college, university, the American Society of Animal Science, and the American Dairy Science Association. McNamara has been a Boy Scout leader for many years and received the highest degree of recognition from the Boy Scouts of America, the Silver Beaver award. He is also an outspoken advocate for K-12 science education and is a board member of the Washington Science Teachers Association, presenting numerous workshops on biological science of agriculture and food production. McNamara's dedication to teaching, research, and service to WSU will be celebrated beginning at 1 p.m. at Zeppoz in Pullman on May 22, 2016.

FACULTY AND STAFF AWARDS

Jan Busboom, Charley Gaskins, and Mark Nelson obtained a patent for their invention.

Larry Fox was the 2015 recipient of the Award of Merit from the National Mastitis Council.

Zhihua Jiang was promoted to professor.

Kris Johnson received the 2015 Sahlin Faculty Award for Instruction and was the recipient of the 2015 CAHNRS Excellence in Advising Award.

Susan Kerr became a fellow of the USDA/SARE NACAASA and

was the 2015 recipient of the Individual Communicator Award for an Educational Piece from the National Association of Extension 4-H Agents.

Martin Maquivar obtained a Teaching Award of Merit from the North American Colleges and Teachers of Agriculture (NACTA).

John McNamara received the 2015 Zoetis Physiology Award from the ADSA.

Holly Neibergs patented an inven-

Mark Nelson was the 2015 recipient of the CAHNRS R.M. Wade Foundation Excellence in Teaching Award.

James Pru was presented with an Outstanding Honors Thesis Advisor Award.

Angela Reitmeier earned a Teaching Award of Merit from NACTA.

Dan Rodgers was promoted to professor and patented an invention.

John Swain was the recipient of the CAHNRS Classified Technical Staff Excellence Award.

DEPARTMENT OF ANIMAL SCIENCES

31st Annual Recognition Program

*Join us as we celebrate the accomplishments
of students, staff, faculty, and alumni.*

Dr. John McGlone will be honored as the Distinguished Graduate in Science, Education, and Technology.

The Petty family will receive the Outstanding Alumnus Award.

The Distinguished Service Award will be presented to **Mike Thoren**.

Doors open at 4:30 p.m.

Program begins at 5:00 p.m.

For additional information

call 509-335-5523

April 8, 2016 · Ensminger Pavilion



Gifts Change Lives

Often, life-changing opportunities happen because of a single gift. A student gains from an experience or succeeds because of a scholarship. A faculty member makes a ground-breaking discovery because of generous contributions. A simple thing, really. Making a gift. Changing a life. If you would like to help us achieve our goals, please consider making a gift to the Department of Animal Sciences.

For more information or to find out how you can help, please contact:

Kristen Johnson, Interim Chair
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(509) 335-5523