

ANIMAL SCIENCES

Spring 2011

The Inside Scoop

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

WASHINGTON STATE
 UNIVERSITY

World Class. Face to Face.

Animal Sciences on the Move...



Dr. Margaret E. Benson
Chair, Department of
Animal Sciences

In the Department of Animal Sciences, 2010–2011 has proven to be a successful academic year for our students, faculty, and staff. I hope you enjoy these glimpses of how and where our activities are impacting our students and stakeholders through our teaching, research, and Extension missions. With 18 faculty members and many dedicated and essential staff, our department is proud of the contributions we are making in the lives and careers of many students. We are equally proud of our contributions to science and to our stakeholders' successes.

As a department, we continually strive to provide the increasingly diverse curriculum necessary to meet the needs and interests of our undergraduate and graduate students. As you will see, our undergraduate students are actively involved in hands-on learning opportunities, internships, and study abroad activities in addition to their regular courses. These experiences serve our students well as they prepare to enter the workforce as career-ready professionals. From discussions with employers of our graduates, we know that many of our students outperform their peers in problem solving and applying their knowledge because of their strong science backgrounds. We encourage all of our students to take advantage of the many opportunities to prepare for exciting careers paths that BS, MS and PhD degrees in Animal Sciences open.

Our research and Extension efforts have also been impactful this last year. Our faculty have successfully competed for a number of impor-

tant national grants in several disciplines. These grant awards are critical in sustaining our research labs and enabling us to contribute valuable knowledge that can impact our stakeholders now and in the future. Translating those research results into applicable and relevant methods and materials useful to Washington residents continues to be the goal of our applied research and Extension programs. Some of these programs are highlighted in this publication.

There is no question that the current tough economic times have had a large impact on how we accomplish our teaching, research, and outreach goals and objectives. However, we continue to make the most effective use of the available resources and continue to look for new sources of support and new partners for our activities. Our goals are to teach and to discover and advance important and relevant ideas and concepts, to our students and stakeholders. Through all of the challenges, an important ingredient to our success is the support we receive from many valued donors and friends of our animal science programs at WSU. Now more than ever, investments in support of our teaching, research, and outreach programs ensure that we can continue to prepare future leaders, contribute to the sciences, and help answer complex questions that impact not only animal agriculture but society in general. On behalf of the entire faculty, staff, and students of the Department of Animal Sciences, thank you for your support.

–GO COUGS!

ANIMAL SCIENCES

The Inside Scoop

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Fall 2010 Students (L to R)
Erik Walker, Erin Reynolds,
Nick Larson, Kim Levine

“This class will provide me with a foundation to create and manage my own [business] in the future.”

~Erik Walker

Animal Science Students of Entrepreneurship

Animal Science students have always received a thorough education in live-stock production and management, but with the growth of diverse markets within the industry, Dr. Margaret Benson saw a need to enhance their educational experience. With funding through a USDA Higher Education Challenge Grant, Dr. Benson founded the Animal Science Students of Entrepreneurship class.

Students in the classes for 2010–2011 included Nick Larson, Erik Walker, Erin Reynolds, Kim Levine, Lauren Nichols, and Kalynn Marcom; graduate student Hannah Gamble is also working with the group in advancing their project. The students negotiated a deal with Pendleton Woolen Mills to produce a beautiful blanket woven with the WSU cougar logo, then developed a business plan and marketing strategy for selling the blankets.

The students are learning marketing, accounting, and website design to help them succeed with this real-world project. The students have enthusiastically engaged in the process, immersing themselves in learning the skills necessary for marketing and selling a product. Nick Larson, who intends to go to WSU Veterinary School and own his own practice, says

he is “constantly benefiting and learning from [his] time in the class.” All of the students have appreciated the small class size that has allowed them to each be a part of every facet of the project.

Nearly half of the blankets have been sold as of January. There is still an opportunity for you to order a Pendleton blanket for yourself or a Cougar fan you know. Money from blanket sales goes back into the fund for the class to launch a new product in a self-sustaining experiential learning strategy.

Visit the group online, www.gocougs.biz, or on Facebook at *WSU, Animal Science Students of Entrepreneurship*. 



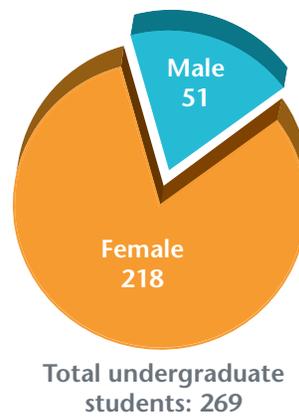
Spring 2011 Students (L to R, back row)
Nick Larson, Erik Walker, Kalynn Marcom,
(front) Erin Reynolds, Lauren Nichols,
Hannah Gamble

NEW STAFF MEMBER Allison Garcia

In October 2010, Animal Sciences welcomed a new administrative assistant, Allison Garcia. Originally from California, Allison and her husband recently moved to Pullman and are enjoying the Cougar pride that permeates the town. Allison has a B.S. in Business Administration, with a concentration in Human Resources, from California State University, Sacramento, and has eight years of experience working in office environments. Her main duty is assisting the department chair, as well as other front-office administrative responsibilities. She looks forward to learning more about the department and working with the students, faculty and staff.



2010 Animal Sciences Student DEMOGRAPHICS



STATES REPRESENTED

- Alaska (4)
- Arizona (1)
- California (9)
- Hawaii (3)
- Idaho (8)
- Minnesota (1)
- Montana (2)
- Nevada (2)
- Oregon (8)
- Utah (2)
- Washington (225)
- Wisconsin (1)

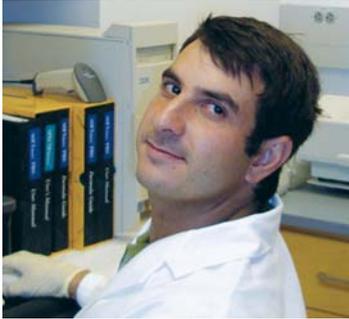
COUNTRIES REPRESENTED (excluding the U.S.)

- Canada (2)
- Hong Kong (1)

Ricardo Zanella & Kaitlin Wilson Win at Wiley Research Exposition

Congratulations to Animal Sciences students Ricardo Zanella and Kaitlin Wilson, who placed first and second in the Agriculture and Life Sciences Category of the 2010 Wiley Research Exposition Poster Presentation on November 9, 2010! This graduate and professional student competition provides an opportunity for students to present their research to faculty, peers, and the general public and to compete for awards.

Ricardo presented his research on the linkage of two bovine chromosomes to bovine respiratory disease and bovine viral diarrhea virus, while Kaitlin presented her research on genetic indicators of tail-biting in pigs. Both winners received monetary awards and are students of Dr. Holly Neibergs, Assistant Professor in the Department of Animal Sciences.



Let Us Hear From You...

Faculty, staff, students and fellow alumni want to know what is happening in your life. Contact us by phone (509) 335-5523 or online at www.ansci.wsu.edu. Click on the "Alumni & Friends" link and fill out the form. If you know of someone deserving recognition, please include his or her name on the form.

NRCEF Award Announcement

Heidi Keen, a PhD student of Dr. Ruth Newberry, was awarded a Natural Resources Conservation Endowment Fund grant for \$1,200 last spring. The grant from WSU supports Heidi's work in using an emerging behavioral task to evaluate environmental enrichment from the animal's perspective. She hopes the task will be a useful tool for distinguishing which items are preferred.



Photo by Jennifer Michal

Her preliminary studies have answered some basic questions about how to apply the task, and the data indicate it is likely to be successful. Her work this year will verify those results on a larger scale.

Pre-doctoral Student Going Places with Awards

Amanda Patterson, a PhD student of Dr. Jim Pru, was recently awarded the newly established travel award in the category of "Outstanding Pre-doctoral Presentation" through WSU's Center for Reproductive Biology. Amanda is studying the transcellular differentiation of uterine stromal cells into epithelial tissue during uterine remodeling that occurs following pregnancy. Based on the high scientific merit of her research project, as well as the therapeutic implications for both livestock production and human medicine, Amanda was selected to present her PhD studies at the annual CRB retreat held in May, 2010 in Spokane.

This travel award is designed to defray costs associated with attending a national or international scientific convention during the 2010-2011



academic year. Amanda has since traveled to Milwaukee, Wisconsin, to present her research findings in the Trainee Research Platform Competition at the 2010 annual meeting of the Society for the Study of Reproduction. Amanda was recognized by the Society

for "research excellence by a student trainee" and she was awarded both the Lalor Foundation Merit Award and the Larry Ewing Memorial Trainee Travel Grant. Also as a result of her efforts, Amanda won second place in the platform competition.

Following the Sequence

with Dr. Holly Neibergs

Dr. Holly Neibergs joined the Department of Animal Sciences faculty in 2006, and has been the lead or co-investigator of several funded projects on genetic markers of disease in cattle, aggressive behavior in pigs, and upcoming projects on feed efficiency in production animals.

Dr. Neibergs' primary focus has been addressing genetic regions that predict susceptibility to Bovine Viral Diarrhea/Bovine Respiratory Disease (BVD/BRD) and Johne's Disease. BVD and Johne's disease present similar problems in that animals can be carriers of the virus or bacteria without showing clinical symptoms. In contrast, animals with BRD often show symptoms of disease shortly after infection. BRD accounts for the annual loss of 1.1 million beef and dairy cattle. Dr. Neibergs and Ph.D. student Ricardo Zanella have genotyped calves persistently infected with BVD virus, plus their dams and healthy calves from the same herd, after colleagues (Drs. John Wenz, Dale Moore, and Shannon Neibergs) tested 10,000 cattle in Washington to detect BVD-infected calves. The genotyping identified regions of DNA that were associated with disease resistance and susceptibility, and this identification is the first step in selecting for animals with less susceptibility

to disease. Dr. Neibergs is collaborating with Dr. Shannon Neibergs (WSU Livestock Extension) and researchers from seven other institutions on a project led by Dr. James Womack of Texas A&M University, to identify ways to reduce the prevalence of, and economic losses from, BRD.

Neibergs' work on Johne's disease has compared the genetics of cattle with and without disease, from the same herds. DNA regions have been identified that correlate with tissue infection and the ability of the cow to tolerate infection. Determining the DNA differences between individuals that tolerate the infection and those that do not allows for selection of animals that are either less susceptible to the disease or are tolerant of the bacterium. The American Jersey Cattle Association, private donations, and the Johne's Disease Integrated Program have provided support for unraveling this genetic puzzle.

Much like cattle exhibiting differences in response to exposure to Johne's disease, pigs show individual variation as to which pig will exhibit tail-biting and which will become the victims of tail biting. Environmental enrichment has

decreased some of the incidence of tail-biting, but one component of the problem seems to be genetically anchored. Master's student Kaitlin Wilson is working with Dr. Neibergs and collaborating with Dr. Adroaldo Zanella of the Scottish Agricultural College to identify DNA regions that distinguish a tail-biter from a victim. Two DNA regions have been identified, one correlating to biting and the other to being a victim. The identification of these regions can be used for selection of animals, and for choosing animals that would be best suited to the different management systems used in swine operations.

Future projects for Dr. Neibergs include finding genetic correlations for feed efficiency. As part of a research project led by Dr. Jerry Taylor at the University of Missouri, she will work with Dr. Kris Johnson, WSU Animal Sciences, on a project determining the role of the mitochondria and genetics in feed efficiency.

Genetics has generated a lot of interest in how organisms relate to their environment. Dr. Holly Neibergs' work is identifying differences in animals' DNA and using that information to enhance animal welfare, reduce disease, and improve livestock production and profitability.



KNOTT DAIRY RENOVATION



After 25 years, the free stalls at the Knott Dairy, south of Pullman, have been renovated. Free stalls are open-access stalls that provide space where cattle can lie down comfortably under cover but still have free access to other paddock areas.

With funding from the Department of Animal Sciences and the Office of the Campus Veterinarian, and labor contributed by dairy students and staff, the old free stalls have been replaced with ones that are more efficient to maintain and more comfortable for the cows. The new stalls can be adjusted to fit cows of different sizes, allowing enough room for cows to stand up and lie down easily but ensuring they do not turn around while in the stall, which helps to keep bedding clean and prevent udder infections.

Knott Dairy staff are pleased with the renovations, and so, apparently, are the cows!

WSU Beef Center Calf Sale



After several years of being marketed at the Evergreen Exclusive in Pasco, WSU's Angus and Angus-cross calves have gained quite a reputation for success with 4-H and FFA youth. Several calves have done well at local fairs, placing as high as Grand and Reserve Champions around the region. Three years ago, Tom Cummings, manager of the WSU Beef Center, started a Club Calf Sale at WSU. They sold 6 of the 10 calves at auction the first year, and the event has grown each year. In 2010, 12 steers

and 4 heifers were sold with an average sale price of \$960/head.

Each year Cummings selects two students to help with organizing and marketing the sale and preparing the calves. It is a lot of work to organize and run the whole sale, and he knows the "students make it possible." Students Tori Smith and Erin Reynolds helped run the sale in both 2009 and 2010. The sale offered them the opportunity to learn more of what judges are looking for in a show calf, as well as how to clip a calf for show, and even how to design a sale catalog and market the sale itself.

"Tom does an excellent job helping us learn," Tori said. "He explains what he wants done, gives us a few ideas for how to accomplish that, but ultimately leaves the decisions to us."

In conjunction with the 2010 sale, guest speakers Bill Armstrong, an Elenbaas feed manufacturer, and Steve Parish, from the WSU Vet School, gave short lectures on best practices for feeding show cattle and basic herd health issues,

respectively, to attending 4-H and FFA members. Sammy Ledgerwood, an Animal Sciences alum, conducted a clipping demonstration for attendees. Door prizes and a silent auction also helped raise money for the Beef Center and to run future sales.

The Beef Center plans to expand the Club Calf Sale with more calves available and speakers as well. If you're looking for a spring or summer show calf or an addition to your herd, join us this year. Visit the WSU Animal Sciences department webpage for updates on the 2011 Fall sale.



BEEF: Quality Assured



Dr. Mark Nelson has been with the Department of Animal Sciences since 1984, and he continues to apply his expertise in ruminant nutrition to changing concerns within the industry. Dr. Nelson's focus is on altering the dynamics of rumen fermentation, including rate of passage, rate of digestion, bacterial protein synthesis, and fatty acid biodehydrogenation to improve beef quality. Working closely with Dr. Jan Busboom, who specializes in post-harvest measures of beef quality, he determines how alterations in diet affect the end product. But for Dr. Nelson, it's about more than good quality beef.

Dr. Nelson takes pride in making beef a more "functional food." By altering the diet of cattle, he can change the rumen bacterial composition which can, for example, control the conversion of unsaturated fats to saturated fats. In short, altering the diets of animals can increase cancer-fighting compounds in the final meat product.

One clear application of Dr. Nelson's work is in assessing grass-fed beef because of its taste differences when compared to grain-fed beef. Drs. Nelson and Busboom, with graduate student Ting Jiang, are compiling

a "short list" of compounds in beef that will allow for screening for both positive and negative flavor characteristics. The screening will be quick and inexpensive and allow producers to more appropriately market products according to their flavors. The preliminary research indicates that off flavors are more often attributed to decreases in what are considered "good" compounds rather than increases in "bad" ones, so the team's work will focus more on increasing those good compounds through dietary changes that will still fall within the guidelines of grass-fed beef.

Problem Solved

Recently, researchers in Nelson and Busboom's lab, with Dr. Birpal Buttar, were able to solve a beef quality issue. The encysting of *Taenia* spp. in the muscle tissue of cattle creates unsightly blemishes in carcasses, leading to problems with marketability and, ultimately, to condemnation. The organism, most likely transmitted through potato byproducts, has increased in prevalence in the last 30 years affecting an average of 0.07% of beef at slaughter. These researchers were able to model the effect of ensiling potato byproducts on the survival of *Taenia* spp., and conclusively found that 21 days was long enough to eliminate the threat. These results have the potential to save the Pacific Northwest beef industry approximately \$1 million per year.

The process of digestion may remain the same in cattle, but changing consumer demands related to meat quality and production practices create new challenges for how we feed cattle. Combining the science of pre-harvest diets with measures of post-harvest quality, Dr. Nelson is helping producers maintain the necessary balance for management strategies and marketable products.

Practice Makes Perfect

Andy Gray, class of 2010, got a fast start in the industry thanks to his preparation from Animal Sciences. After graduating on a Friday he started work the next Monday at All West Select Sires as an artificial insemination (AI) technician, and was breeding cows the first day! Gray credits his experiences in Cooperative University Dairy Students (CUDS) with giving him the experience he needed to get the job. As president of CUDS last year, he made reproduction in the dairy herd his top priority. To Gray, being president of CUDS was like running a business, and his "success was measured by the success of the cooperative." He coupled that work with a focus on reproduction management for Dairy Challenge Team and the AI/pregnancy checking class to further increase his value in the job market.

Gray lauds a number of his professors for their valuable instruction, including Drs. Jude Capper, Larry Fox, and Shannon Neibergs, who showed Gray how to set goals, to work through appropriate channels to reach those goals, and to understand the value of a cow beyond its production stats—all of which help to propagate a viable business. Andy Gray's own business sense allowed him to parlay his extracurricular involvement into experience that is recognized by the dairy industry and stud companies, and it has paid off by leading to his current position.



Photo by Jennifer Michal

DAIRYING

Down Under



Summer in December? Dairies that feed only grass? That's bright—if you're in Australia or New Zealand where Dr. John McNamara was fortunate to spend his sabbatical last year. McNamara started his study in Australia with scientists from the University of Melbourne and the University of Sydney, working to improve and expand bio-mathematical models used to improve the understanding of the basic metabolism of the dairy cow and the efficiency of dairy production. Previous research, particularly in the United States, has focused on two-way interactions between nutrition, genetics, and reproduction in every combination, but models that accurately predict the interplay of all three components are still in development.

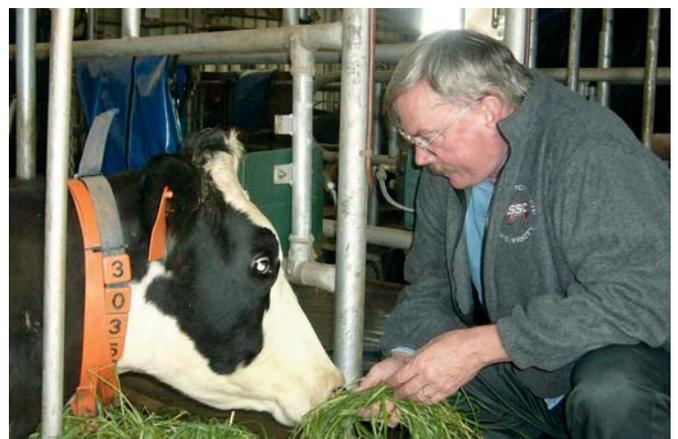
“Even though we have only studied one or two elements at a time,” says McNamara, “the cow does them all simultaneously.” With his Australian colleagues, McNamara is working to outwit the cow.

Australia and New Zealand both require and support a production system based on feeding grass, due to their countries' limitations in grain supply and their ability to export products at a high price. The advantage of the grass-based system, from a research perspective, is that it allows comparisons between grass-based and grain-based management systems when evaluating efficiency models. Additionally, it provides a more global application for any derived models because most countries in the world cannot afford to feed their dairy cattle grain.

Many nations are scrutinizing their ecological footprint from animal production, and New Zealand is no exception. Their

interest in modeling dairy efficiency is to help them reduce methane outputs from dairy production by 25% in 10 years while still managing 4.5 million cows on pasture. However, the limitations of chemistry are not in their favor. The only two ways to decrease methane would be 1) to increase the amount of grain fed to cattle, because greater grain input results in less methane production; or 2) to reduce the number of cows.

McNamara's work abroad has resulted in several publications and invited lectures, including the Plenary Lecture at the Third International Symposium on Energy and Protein in Parma, Italy. The groundwork has also been laid for collaborations on large-scale comparative projects and opportunities for graduate students. Now that he's returned to the States, McNamara will take advantage of these opportunities to enhance models for the U.S. dairy industry, and to plan his return trip.



Opportunities of a Lifetime

Growing up on an organic farm in Mount Vernon spurred an interest in agriculture for Philip deVries, and he has expanded that interest by pursuing unique opportunities as they arose. The first opportunity was to purchase and develop a small herd of dairy bull calves when he was 11. As long as he took all responsibility for the bulls, his father agreed. Philip not only met that requirement, but built his herd to 65 animals by the time he was in college. The second opportunity Philip seized was participating in Cooperative University Dairy Students (CUDS) where he learned more about the dairy industry and differences in management between dairy cows and his herd of replacement dairy bulls. This is also how he became more acquainted with Dr. John McNamara who would later set him on an adventure with Philip's third opportunity—to conduct research with Dr. Jim Gibbs in New Zealand.



Philip already knew about New Zealand's management concept of basing agricultural production on plant potential and grazing capacity rather than hauling feed in and manure out. He had always been interested in experiencing these techniques for himself, so when the opportunity arose, he didn't hesitate to go to Lincoln University near Christchurch, New Zealand through the study abroad program. Philip enrolled in a variety of classes related to production and management, but what he really wanted was to work on a farm while he was there. Serendipitously his dairy instructor in New Zealand had also lived in Mount Vernon and invited Philip to come out and work on his grass-based dairy farm.

Of course Philip was still attending classes, going on field trips, and assisting with ruminant research trials to make the most of his time abroad. From observing cattle behavior to sticking his hand in rumens for sample collection, Philip feels he learned as much as was possible in his time in New Zealand. "The learning curve was so steep and fast that I just had to," deVries says. "I was also incredibly interested in the material, so that helped significantly." Among the things he learned were how to manage beef and dairy herds based on a pasture system, 60 different plant species and their traits, and, importantly, how to say "cow" in five languages.

Thanks to the preparation at WSU and the help of Dr. McNamara, Philip deVries was able to "jump right in and get going," to seize every opportunity during his time in New Zealand.

...And You Think *Your Office is a Zoo!*

After graduating from WSU in May 2010 with an MS degree in Animal Science, Shawnese Rocco was given a spectacular opportunity to intern with nutritionists at the world-renowned San Diego Zoo. Working essentially as an associate nutritionist, Shawnese worked for two months researching and developing diets and performing digestion trials. The diversity of species housed at a zoo makes for a variety of experiences and challenges, such as constructing a balanced ration for a Bactrian camel using only two feed items; replicating a vitamin and mineral formula for a New Zealand Kiwi; and preparing nutritious diets for the pandas' long journey back to China. Outside of the kitchen, Shawnese collected samples from the Wild Animal Park to evaluate digestion and conducted a complete feed trial on Calamian deer to address health concerns. "The experience combined all elements of what I believe to be the perfect job," Shawnese commented. "I got to interact with animals on a clinical level, to interact with people regarding the health and diet of the animals in their care, and to help design diets for the animals." Shawnese was thrilled with her experiences and the opportunity to learn what it is like to be a zoo nutritionist. Shawnese hopes to return to the San Diego Zoo if they open a residency program for nutrition, but in the mean time she is completing a veterinary technician training program.



Investing in the Future with Animal Sciences Graduate Students

Training future scientists in animal science is a priority of the Department of Animal Sciences. Here is a brief overview of research that our current students are conducting with their major professors.

Johnathan Broady (Ph.D.) is evaluating the cellular dynamics of spermatogonial stem cells and the role of membrane progesterone receptors in testicular physiology. (Derek McLean)

Kyle Caires (Ph.D.) studies factors regulating sperm production and spermatogonial stem cell homeostasis in mammals to provide novel strategies for increasing fertility in agricultural and biomedical applications. He is a faculty member at Berry College in Rome, GA, teaching Genetics of Livestock Improvement and Reproductive Physiology. (Derek McLean)

Winnie Chan (Ph.D.) has been researching the components of pigs' bark vocalizations that may convey information of perceived threats or play. She intends to apply her findings to developing enrichment strategies for production facilities. (Ruth Newberry)

Leticia Fannuchi (Ph.D.) will be looking at the behavioral and physiological responses of adult companion dogs to loss of their familiar canine companions and the impact of interaction with their owners after the loss. (Ruth Newberry)

Christopher Gambino (Ph.D.) will characterize greenhouse gas emissions from ruminant production systems in order to develop nitrogen estimation models for identifying critical control points for mitigation strategies. (Kris Johnson)

Hannah Gamble (M.S.) is investigating the impact of ruminant livestock on the environment with the ultimate goal of developing mitigation strategies to aid producers. (Kris Johnson)

Ting Jiang (Ph.D.) evaluates the components of grass-fed beef that contribute to palatability. (Mark Nelson, Jan Busboom)

Heidi Keen (Ph.D.) is testing a novel assessment for determining the psychological value of environmental enrichment items for animals. (Ruth Newberry)

Justin Lange (Ph.D.) is interested in muscle biology and examining the roles of muscle development on muscle performance and injury protection. (Dan Rodgers)

Lindsay Madden (M.S.) is interested in the benefits of human-animal interactions and development of human-animal bonds. For her research, she will evaluate the effects of pairing troubled teens with shelter dogs in a mutually beneficial interaction using a dog socialization program. (Ruth Newberry)



Winnie Chan



Ting Jiang

Angela Oki (Ph.D.) is developing and testing educational interventions to improve understanding of reproductive physiology concepts by university students and Ob-Gyn patients. Her objective is to develop learning systems that can be adapted for use in other disciplines such as nutrition, microbiology, and physiology. (Derek McLean)

Amanda Patterson (Ph.D.) is exploring mechanisms of tissue regeneration in the uterus because of its regular cycles of degeneration and regeneration. Of particular interest is the potential for confirming the presence of a stem cell population in the uterus that could provide clues to the etiology of proliferative diseases such as endometrial cancer and endometriosis. (Jim Pru)

Reanna Roby (Ph.D.) is exploring the evolutionary costs of muscle growth by examining the reproductive consequences of enhanced muscle growth and its effects on reproductive development and maturation. (Dan Rodgers)

Shannon Shields (Ph.D.) is modeling the interplay among nutrition, genetics, and reproduction in dairy cattle to assist producers in maximizing efficiency. (John McNamara)

Robin White (M.S.) is using modeling to explore the environmental implications of different management techniques in beef cattle production. Based on her results she will create a program for cow-calf producers to optimize their monetary and environmental efficiencies. (Jude Capper)

Kaitlin Wilson (M.S.) is conducting a genome-wide association study to find loci associated with tail-biting behavior in pigs. Her work is a collaboration with Dr. Adroaldo Zanella of the Scottish Agricultural College. (Holly Neibergs)

Ricardo Zanella (Ph.D.) is continuing his work on the identification of genetic regions involved with susceptibility and resistance to infectious diseases in cattle, including Johne's disease, Bovine Viral Diarrhea, and Bovine Respiratory Disease. (Holly Neibergs)



Angela Oki



Reanna Roby

Recent Graduates



Birpal Buttar, Ph.D., is working at the Spay and Neuter Clinic in Moscow, ID, to gain experience for his final veterinary exam for U.S. certification. (Jan Busboom)

Tammy Donaldson, Ph.D., has taken a consulting position with Pethealth, Inc., a software developer for animal shelters, advising them on behavior components to include in their pet matching service for fitting dogs with prospective adopters. (Ruth Newberry)

Andrina Huisman, M.S., is working at the WSU Feed Mill and continues to assist Dr. Kincaid in feed trials at the Knott Dairy. (Ron Kincaid)

Vanessa Michelizzi, M.S., has just accepted a position at the University of Georgia in plant genomics. (Zhihua Jiang)

Tracy Quirk, M.S., has begun the Veterinary Medicine program at WSU. (Larry Fox)

Shawnese Rocco, M.S., has completed an internship at the San Diego Zoo in animal nutrition and is now attending classes to become a veterinary technician. (John McNamara)

Student Clubs



ASGSA (Animal Sciences Graduate Student Association)

President: Ting Jiang

Advisors: Kristen Johnson & Ruth Newberry

ASGSA has continued to provide support during department functions, including the Friends of Animal Sciences' Tailgate and Animal Sciences Awards Banquet. The group is selling t-shirts to provide their students with travel grants, and is engaged in community service work through food bank donations and a Relay for Life team.

Block and Bridle

President: Lauren Broeckel

Advisors: Margaret Benson and Holly Neibergs

Block and Bridle offered opportunities for their members to assist at the Palouse Empire Fair and with regional 4-H groups, attend the National Block and Bridle Convention, and assist WSU in preparing their calves for sale at the Evergreen Sale in Kennewick. They remain committed to providing diverse opportunities for gaining experience in animal sciences.



Collegiate Horseman's Association

President: Jamie Harden

Advisor: Derek McLean

Collegiate Horseman's Association has continued their volunteer work at Orphan Acres Horse Rescue and Sanctuary. To raise funds for their work and generate club interest, they hosted "Minis-on-the-Mall" and a Mom's Weekend raffle. They would like to recognize Jaclyn Vincent as their Top Volunteer with the most hours for the club.

CUDS (Cooperative University Dairy Students)

President: Kala Fagan

Advisor: John McNamara

CUDS is currently operating a herd of 35 lactating cows at Knott's Dairy Farm and selling their milk to Ferdinand's Creamery on the WSU campus. At their annual review in October, students were able to work with industry leaders to develop their management plan. CUDS would like to recognize their MVP Breeder Brian Schoch, MVP Milker Jenny Trice, and MVPs Dairy Comp 305 (Valley Ag Software's program for use in managing dairy operations) Amber Quann and Abbi Olson.





CCF (Cougar Cattle Feeders)

President: Brittany Reich

Advisor: Mark Nelson

CCF members acquire feedlot management skills by managing donated and custom-fed animals at the WSU Cattle Feed Lab. CCF attended the Washington Cattlemen's Association Convention and the Young Washington Cattlemen's Association Tour. Their activities included the WSU CCF Field Day in April and feedlot tours of El Oro and Easterday Inc., in November.

Dairy Challenge Team

Advisors: Larry Fox, John Swain

The Dairy Challenge Team competed at the Western Regional Competition in Twin Falls, ID, where Jenny Trice was on a Platinum team. The senior team—consisting of Tory Shepherd, Anne Marie Stickney, Andy Gray, and Chloe Dixon—earned a Silver award at the National Competition in Visalia, CA. This year's team is still forming, but they look forward to another successful year.



Dairy Club

President: Brooke Vander Veen

Advisor: Larry Fox

Dairy Club has had an eventful year participating in the Hoards Dairyman Judging Contest, Washington State Dairy Federation Convention, and American Dairy Science Association National Conference. They have still found time to continue their mission of education about the dairy industry through events like Dairy Tours, Fall Festivals, Dairy Olympics, Cougar Youth Weekend, and even a Papier-mâché Cow contest.

SSC (Student Swine Cooperative)

President: Nick Larson

Advisor: Dean Peters

SSC manages 10 sows and their piglets at the WSU Swine Center from farrowing to finishing and marketing. Recently the group's pork has made the menu at local Pullman restaurant, The Black Cypress. This year 5 members went to Iowa in June for the 2010 World Pork Expo. Members have traveled to several regional fairs and events, including the Palouse Empire Fair, Latah County Fair, and the Pend Oreille 4-H Animal Days to serve as judges and provide leadership to 4-H and FFA groups.



WSU Pre-Vet Club

President: Kayla McNett

Advisor: Dr. Patrick Wilson

The WSU Pre-Vet Club (formerly the Organization of Future Veterinarians) has toured the Wolf Education and Research Center in Winchester, ID, to learn about wolf behavior and conservation. Members will be participating in the American Pre-Veterinary Medical Association Symposium in March. The club recognizes Ashley Falter and Elizabeth Mann as their Most Involved Members.

Persistence Pays Off



Jake Larson's parents started working with Highland Cattle when Jake was 8, and for him, cattle have been a growing passion ever since. When deciding on college, he was happy to find that his in-state school, WSU, was one of the best in the country for Animal Sciences degrees geared toward livestock management. During his time at WSU, Jake participated in Cougar Cattle Feeders, which provided additional hands-on education. As the feedsman for the group, Jake worked with nutritionists to formulate rations and he tracked gains to ensure the best productivity in the herd.

After graduating in May 2010, Jake went to England and Scotland for six months to gain more experience with Highland Cattle. He had taken the initiative to contact approximately 20 Highland Cattle farms throughout England, Scotland, Australia, and New Zealand to see if anyone was looking for qualified help. Jake went to work for Robert and Wendy Phillip, owners and operators of Hellifield Highland Beef, helping them to show their breeding stock and managing beef operations for their private meat shop. He was pleased to find that what he had learned at WSU was very applicable every day and that his skills were well-suited to the work.

Thinking back on his time at WSU, Jake is grateful for the influence of professors like Drs. Charley Gaskins and Kris Johnson.

"[Professor] Gaskins was a very motivating figure in my education. He really pushed me to succeed in CCF." Jake also says, "[Dr. Johnson] wants you to learn all she has to teach," and he now uses that knowledge on a regular basis. Jake also appreciates the unbiased approach of many professors, noting that even though their training was focused on mainstream production, they were always open-minded and even encouraging about projects in niche markets such as for Highland Cattle.

Currently Jake Larson is working as a veterinary technician in Helena, MT.





Department of Animal Sciences 26th Annual Recognition Program

This year we will recognize **Annie Lohman** for Distinguished Service to her community in Skagit County, where she has served on the Skagit County Farm Bureau and works to promote youth involvement in agriculture.

Dr. V. Liné Estergreen, alumnus and retired professor from WSU, will receive the Outstanding Alumnus Award for his contributions to the dairy industry as a researcher and to the Animal Sciences department as a faculty member and student mentor.

The Distinguished Alumnus in Science, Education, and Technology Award will be presented to **Dr. Gary Moss** for his achievements in reproduction research and teaching, including over 200 publications, almost \$2 million in research funding, and nearly 20 successful graduate students.

Plan now to attend the informal BBQ and celebrate another successful year with friends, families, and alums. Assist us in planning a great event by letting us know you'll be there. Contact Allison Garcia at (509) 335-5523 or by e-mail: allison.garcia@wsu.edu.

We hope to see you on April 8!

April 8, 2011
Ensminger Pavilion

Gathering begins at 4:30pm

Program begins at 5:00pm





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:

Margaret Benson, Chair
m_benson@wsu.edu
(509) 335-5523

