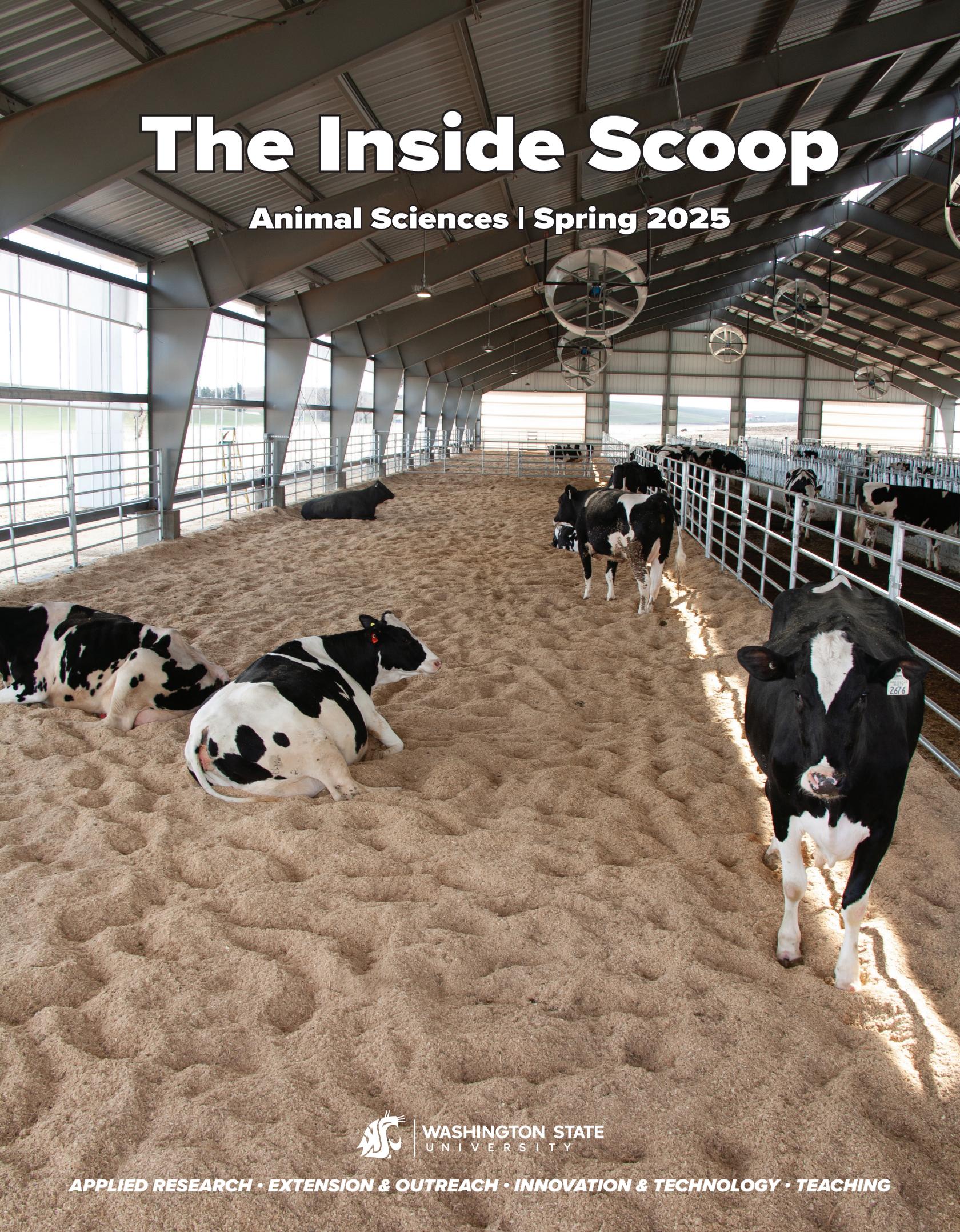


The Inside Scoop

Animal Sciences | Spring 2025



WASHINGTON STATE
UNIVERSITY

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



Gordon Murdoch

I know that I have mentioned what an honor it is to serve in the role as Chair of the Animal Sciences department at WSU, and that continues to be my mind-set. Having completed my 4-year contract, I was offered the opportunity to continue as Chair for an additional term. While the years seem to roar by, sometimes realizing improvements and change in an academic unit takes somewhat longer. I am witnessing positive outcomes of the department's vision. We continue to experience growth

in undergraduate enrollment, and we have made significant and strategic improvements to our Beef Center, Feed Mill, land-resources, Knott Dairy Center and the Meats Lab. The AS faculty and staff parlay their expertise and passion into our classrooms and laboratories, creating the next generation of competent animal scientists. While our faculty numbers are low, we have several advertised positions for new faculty and we are excited about strengthening our program further in the service of our students, as well as the livestock and allied industries. An academic program is a direct reflection of its human resources, the addition of new staff and new faculty ensure the strength of our department well into the future. Our aspirations for AS are no less than to achieve "excellence". We have dreams just like those expressed in the movie; *Field of Dreams* by W.P. Kinsella and we too believe that if "we build it, they will come". Our future as the state land-grant agricultural institution depends on our management of the present to prepare for the future, it depends on our students and it depends on our relationships with industry and stakeholders. I hope that we continue to earn your respect and support and that we retain all of the positives that for decades have been associated with being an Animal Sciences COUG! Please enjoy this years *Inside Scoop* and take pride in both where we are and where we are headed.



The Inside Scoop

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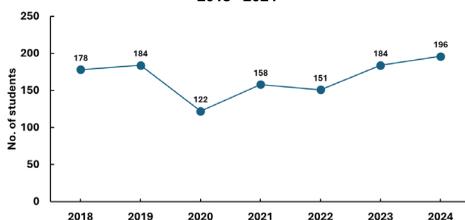


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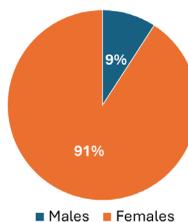
STUDENT DEMOGRAPHICS

New student enrollment numbers continue to climb, reaching 196 in fall 2024. There are currently 470 students in Animal Sciences. Females make up 91% of the student population.

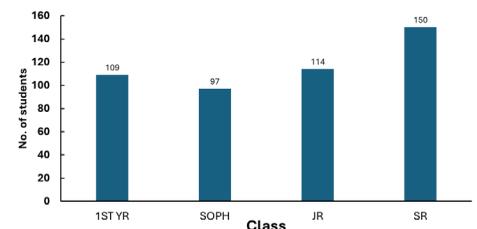
New Students Enrolled in Fall Semester
2018 - 2024



Distribution by gender



Student Distribution by Class



ON THE COVER: Inside view of the new compost bedded pack barn at the Knott Dairy Center. When properly managed, this type of barn offers a dry resting surface for cows, leading to cleaner cows and udders. In contrast to freestall barns, cows have increased freedom of movement and can lie down and rise more naturally.



Kat Moen, a senior majoring in animal sciences from Seattle, has recently revealed that she has been serving as WSU's mascot, Butch T. Cougar, since the spring of 2023. Her friends were unaware of the reasons behind her frequent absences from social and sporting events over the past few years. The nature of her commitment remained undisclosed until she officially announced it on social media several weeks ago.

Butch's identity is a closely guarded secret, and keeping the secret is the most difficult aspect of the job. "It was so hard to keep the secret," Moen said. "I am a terrible liar, and I wanted to tell everyone so badly. I told my parents and my boyfriend, but I couldn't tell my best friends. They were so upset to hear the truth when I revealed Butch's identity on Instagram a few weeks ago."

During her first year, Moen expressed her interest in becoming Butch to Dr. Kris Johnson while discussing her four-year education plan in the Animal Sciences Orientation class (Anim_Sci 180). Johnson noted that there was no reason a female could not assume the role of Butch and encouraged her to audition. Moen is now the fourth woman to wear the suit. "It was a fulfilling moment when I visited Dr. Johnson recently to inform her that she was correct - a female could indeed be Butch."

Before serving as Butch, Moen played the piccolo in the WSU marching band. "I appreciated the strong sense of school spirit and the vibrant energy while supporting the team on the field," she said. "I sought a new experience beyond my role in the band."

She followed Dr. Johnson's recommendation and auditioned for Butch. During the process, she was interviewed, led a 'Go Cougs' chant on the field, and performed a skit using props to show her creativity. After securing the role, she enhanced her fitness at the gym and trained with her predecessor to master the character. "Butch is a predefined persona I adopted," she said. "However, my own personality likely influenced his character."

Butch is present at all sporting events and numerous marketing events for the University. Moen said, "It is certainly a full-time commitment. I had to develop my time management skills to meet Butch's obligations while maintaining my academic responsibilities."

Moen loved interacting with all Cougar fans as Butch, particularly children. Many children would present Butch with cards or drawings, which she has kept as keepsakes. The interactions at baseball games were particularly pleasant due to their spontaneous and enjoyable nature, often including activities such as tic-tac-toe or playful sword fights involving a straw and Butch's tail.

"This experience has been both valuable and remarkable," Moen said. "I acquired numerous interpersonal skills and learned how to adapt and navigate through a variety of unexpected situations. I did not anticipate any of this."

As Moen transitions from her role as Butch, she is now focusing on gaining admission to veterinary school. With a passion for problem solving and working with both people and animals, Moen aspires to become a holistic large-animal veterinarian in a rural setting, utilizing a blend of conventional and



Coming out on the field as Butch on a football game day was an incredible rush. Photo: Shelly Hanks

Kat Moen WAS Butch T. Cougar



*Photo:
Ashley Davis Photo*

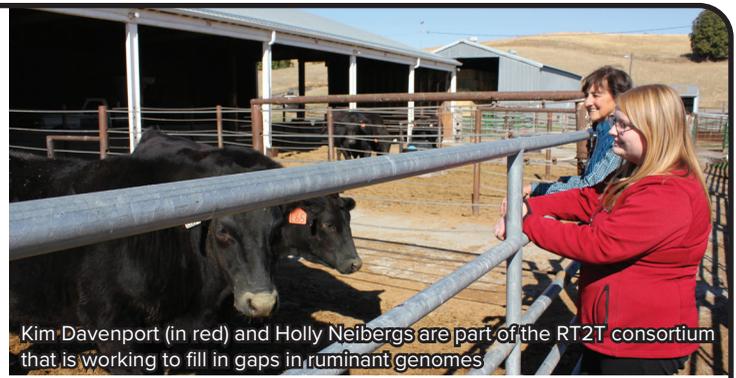
alternative therapies to treat her patients. The time management skills she developed during her tenure as Butch will be invaluable in managing the demanding schedule of veterinary school, while her unique interpersonal abilities will facilitate effective interactions with her clients – man and beast.

Unlocking the Genetic Secrets of Ruminants

The Ambitious Vision of the RT2T Consortium

Dr. Holly Neibergs and Dr. Kim Davenport are prominent members of the Ruminant Telomere-to-Telomere (RT2T) Consortium, a distinguished international and interdisciplinary collaboration of scientists. Announced in the August 5, 2024 issue of *Nature Genetics*, the consortium is committed to producing comprehensive and precise genome resources for a variety of ruminant species, including cattle, sheep, goats, deer, and giraffes.

Many ruminant species have reference genomes; however, these genomes often contain sections that are missing, incomplete, or fragmented. Sequencing technologies break long DNA strands into smaller pieces for sequencing, and computer algorithms then combine these fragments into a complete DNA sequence by using overlapping regions. Traditional sequencing methodologies were limited to short DNA segments, making it difficult to accurately reconstruct repetitive sequences within complex genomic regions such as telomeres—areas at the ends of chromosomes involved in cell division, aging, and cancer prevention. This often resulted in incomplete assemblies of ruminant genomes. Recent advancements in DNA sequencing technology aim to address these limitations.



Kim Davenport (in red) and Holly Neibergs are part of the RT2T consortium that is working to fill in gaps in ruminant genomes

The RT2T project originated from the remarkable advancements made by the Human T2T Consortium. Through collaborative efforts, the HT2T Consortium created pioneering tools that enabled the production of the first complete human genome assembly, as published in *Science* in April 2022. The RT2T Consortium intends to adopt similar methodologies to sequence and assemble gapless genomes from telomere to telomere for various ruminant species.

The data generated from this initiative will be freely available, allowing researchers worldwide to contribute to and benefit from the detailed genetic blueprints of these species. This may provide insights into the evolution of ruminants and support advancements in farming practices and animal breeding decisions aimed at improving breed quality, health, and livestock productivity.

Furthermore, the efforts of the RT2T Consortium can be instrumental in conservation initiatives. A thorough understanding of complete genomes can aid in managing the genetic diversity of endangered ruminant species and implementing strategies to improve their survival rates.

Recognizing the Distinguished Service of Don VanTine



Don VanTine (middle) meets with Belicia Guzmán (left) and Chiron Susee (right) about pigs for SSC

We are delighted to announce that Mr. Don VanTine has been bestowed with the 2025 Distinguished Service Award. The department sincerely acknowledges his steadfast commitment to advancing research and education in swine production, his support for Extension programs, and his advocacy for the pork industry in the state of Washington. Mr. VanTine is a board member of the Washington Pork

Producers Association and currently serves as the state contact for the organization. Over the years, he has provided invaluable guidance to members of the Student Swine Cooperative, facilitated educational tours of his farm to showcase a functioning swine production facility, and offered students practical experience in piglet processing.

VanTine pursued a degree in general agriculture at WSU during the early

1970s. His comprehensive education encompassed coursework in animal sciences, agricultural mechanics, agricultural economics, soils, and entomology. He earned a Bachelor of Science degree in 1974 and then returned to assist with operations on the family farm alongside his father.

The VanTine farm, currently managed by Don and his son, was established in 1883 and has remained under continuous family ownership and operation since its inception. Located in Whitman County, the farm includes a farrow-to-finish swine operation and approximately 1,550 acres of farmland where they grow wheat, barley, and other crops along with 500 acres of pasture and timber. The farm used to finish 1,500 pigs annually but now produces about 800 due to marketing challenges.

The Department of Animal Sciences and our students sincerely appreciate Don VanTine and others like him for their generous support of the university's mission in education and research in livestock production. Congratulations and thank you, Don.



Anna Macleod's Feedlot Internship Experience

Anna Macleod took a gap year in 2020 after she graduated from high school in Bend, Oregon, because of COVID-19 shutdowns and to work and earn money to pay for college. She came to Pullman in fall 2021 and began working on an animal science degree.

Because of her experiences with pigs in 4-H, Macleod immediately got involved with the WSU Student Swine Cooperative and was a member for two years. However, she soon discovered she was really interested in the beef production industry, especially feedlot operations.

Macleod did not grow up with beef cattle and wanted to increase her skill set and knowledge of beef cattle production and feedlot operation and management to prepare herself for a career in the industry. Fortunately, the College of Agricultural, Human, and Natural Resource Sciences (CAHNRS) hosts a career fair and networking night each semester, allowing students to connect with and explore career and internship opportunities with potential employers. Two summers ago, she took part in an internship with Beef Northwest and worked at a feed yard in Quincy, Washington. More recently, Macleod met with representatives of Agri Beef and landed an internship with the company, which she completed in summer 2024.

Agri Beef operates feed yards in Idaho and Washington. Macleod's internship last summer was at Boise Valley Feeders in Parma, Idaho, which has the capacity to feed up to 30,000

head of cattle. She was involved in just about every aspect of the feedlot's operation, ranging from riding with the cowboys and moving cattle, daily pen checks, checking cattle health and treating cattle in hospital pens, working with the maintenance, yard and feed crews, and driving feed and haul trucks.

"I loved working in the feedlot," Macleod said. "Every part was the best part. There is a lot of science behind what they do, from treatments in hospital pens to nutrition programs and how they change rations. I also really enjoyed building relationships with people in the company. They are valued contacts and friends!"

Macleod said that students interested in working in the cattle feeding industry should look for internships with companies like Beef Northwest and Agri Beef at events like the CAHNRS Networking Night or use online searches.

"Don't be afraid to reach out and talk to the representatives," she said. "Go to a lunch interview. I was freaking out when the guys from Agri Beef invited me to lunch, but my adventure began when I said yes."

Macleod graduated in December 2024 and moved back to Bend. She is currently researching options for her future. She is considering several possibilities, including a graduate school program focused on beef production and nutrition, or working for a livestock research or beef cattle company.



New Beef Cattle Management Team Supports Research, Teaching, and Extension



The management of the WSU Beef Cattle Operations has experienced substantial changes over the past year with the appointment of a new manager and assistant manager.

MANAGER - RYAN GOODMAN

After a comprehensive national search, Ryan Goodman was appointed as the Beef Cattle Operations Manager in August 2024. He oversees the cow/calf operation at the Ensminger Beef Center, producing cattle for research and for WSU Premium Beef, and manages the Cattle Feeding Laboratory.

Goodman has extensive knowledge and experience in several areas of the beef cattle production industry. His experience encompasses research, management of commercial cowherds, stocker cattle, seedstock cattle, and feedyards, as well as pasture management, marketing, communications, and advocacy.

He was raised on his family's ranch in Arkansas, where they managed a commercial cow-calf operation with 1,200 head of cattle and approximately 12,000 stocker cattle. He graduated from Oklahoma State University in 2010 with a BS in animal science, focusing on stocker and cow-calf management, feeder nutrition, and reproduction.

Goodman gained practical experience as a herdsman at his family's

ranch for a summer and through internships, including a feedyard management internship at Cactus Feeders in Texas, and an internship at a ranch in Wyoming. After college, he worked as a management trainee for JBS Five Rivers Cattle Feeding but concluded that the large-scale business environment at Five Rivers did not align with his career goals. He subsequently worked at various ranches before attending graduate school at the University of Tennessee, focusing on nutritional and reproductive management research.

In 2013, Goodman became the communications manager for Montana Stockgrowers, representing the association and using social media to share producers' stories. In 2017, he joined the National Cattlemen's Beef Association (NCBA) in Denver, leading national advocacy efforts. During the pandemic, he briefly left NCBA to assist seedstock producers and market freezer beef, returning to advocacy in 2022 as the Director of Communications at Certified Angus Beef (CAB).

Excited about the WSU job opening, Goodman, who enjoys teaching and helping others learn, aims to enhance research facilities through industry contacts. His goals include improving watering systems, pasture fences for sustainability, and implementing digital feeding

programs for practical student experiences. Student workers and volunteers will engage in hands-on learning with cow herd management, record keeping, calving, and branding.

"I want our beef facilities to be open for everyone to ask questions and learn," he said. "I aim to engage the next generation in the beef industry."

In his leisure time, Goodman enjoys trail running, testing his endurance and physical limits. He has completed several 100-mile races and plans to participate in races in the Northwest this summer, as well as a 100-kilometer race in the Swiss Alps this fall.

ASSISTANT MANAGER - BAILEY GRAHAM

Bailey Graham was appointed as the Cattle Operations Assistant Manager in March 2024. She is originally from Northern California and obtained a BS in ranch management in 2022 from Feather River College in Quincy, California.

Her professional background includes working at IX Ranch in Montana, various local cattle ranches, and her college's beef facility. Additionally, she has completed advanced coursework in artificial insemination and cattle management. Prior to joining WSU, she served as a 4-H program assistant at the University of Arkansas.

Graham is enthusiastic about collaborating with Goodman to enhance research and teaching initiatives at WSU's beef facilities. In the short term, her responsibilities will encompass overseeing calving operations at the university's Snake River canyon pastures. She will reside on-site in her RV from mid-March until May, conducting daily pasture inspections for new calves. Students will participate in afternoon sessions to gain hands-on experience with rangeland calving, calf processing, and fence maintenance.

In her leisure time, Graham enjoys running, reading, relaxing, and spending time with her two dogs and her fiancé, Jordan Johnson. He recently joined the Moscow Police Department and is expected to complete his police academy training in April. The couple plans to marry in September.

BEEF CENTER NEWS & UPDATES

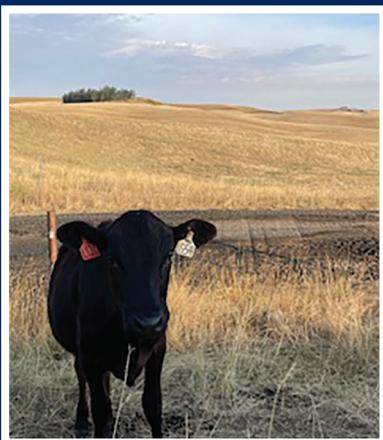
WATER DELIVERY

Upgrades to the water delivery systems have commenced at the Beef Center. The water tanks in the pastures have been replaced with all-season water tanks. Enhancements to pasture fencing are underway to improve rotational grazing and sustainability. New automatic water tanks for the barns have been acquired and will be installed this summer.

POLLED WAGYU

In 2018, Brent McCann, the former Cattle Operations manager, began breeding homozygous polled Wagyu cattle. Genetic testing by the American Wagyu Association confirmed two homozygous polled Wagyu cattle born in 2023 – a heifer named WSU Miss L120 and a bull named WSU L125. DNA tests will continue to be used to identify other homozygous polled Wagyu cattle in future calf crops.

"This achievement is significant," stated Goodman. "Homozygous polled Wagyu cattle are rare and valuable because their offspring will never have horns and eliminates the need for dehorning. This trait is especially beneficial in natural service programs focused on low-input management and animal welfare. These genetics offer a progressive solution while maintaining the integrity and quality of Wagyu beef."



Meet WSU Miss L20, the first confirmed homozygous polled Wagyu in the WSU herd

Dana DeRego Catron (BS '09) believes her education in animal sciences at WSU laid a solid foundation for her future endeavors, where she was inspired by influential mentors like Dr. Zhihua Jiang and Dr. Kris Johnson, who encouraged her to engage in undergraduate research and embrace challenges as opportunities for growth.

She continued her education at New Mexico State University (NMSU), obtaining a master's degree in rhetoric and professional communication, and is currently pursuing a PhD in the same field. Her unique background in animal sciences allowed her to bring a distinctive perspective to her graduate studies.

A graduate assistantship at Arrowhead Center, NMSU's technology transfer, intellectual property and economic development office, led to a career-defining opportunity. Today, Catron serves as the interim Director and CEO of Arrowhead Center, overseeing a team of nearly 40 and more than 20 innovation-focused programs. She is the principal investigator on multiple federal funding awards supporting entrepreneurship, tech commercialization and small business development across New Mexico.

She continues to bridge her agricultural roots with her work in innovation and commercialization, securing funding to launch New Mexico's first Agriculture Venture Center and supporting rural communities with efforts like the Mobile Matanza, a semi-mobile meat processing facility in northern New Mexico. She also works with NMSU's Dr. Craig Gifford to commercialize the BoviPrime Health Test, a diagnostic tool to identify bulls that sire calves more resilient to bovine respiratory disease.

We honor Catron with the 2025 Outstanding Alumnus Award, a recognition of her accomplishments and continued impact in both the agricultural and innovation sectors.

"Choosing a career path isn't always linear," she advises today's students. "The skills you gain in animal sciences can open doors far beyond what you might expect. Stay curious, build

2025 Outstanding Alumnus

Dana DeRego Catron



relationships with your professors, and don't be afraid to explore paths that still connect you to the industry in meaningful ways."

Catron lives with her husband and two daughters (ages 5 and 8) on property outside of Santa Fe, where they have horses, goats and continue to navigate farming in the high desert. In between her work and coaching a local swim team, she's still deeply connected to the land – and to the lessons she learned as a Cougar.

Dana DeRego Catron's remarkable journey, from her transformative experience at WSU to her significant contributions to agriculture and innovation, exemplifies her status as an extraordinary alum. Her story serves as an inspiration to current and future students, highlighting the profound impact of dedication, mentorship, and a passion for one's field.

What is the Student Swine

An Ideal Experience for Aspiring Swine

Joining the Student Swine Cooperative (SSC) offers an exceptional opportunity for students who are interested in pursuing careers in the swine industry or becoming veterinarians. The SSC provides comprehensive hands-on, practical learning experiences that are invaluable for these career paths.

REAL-WORLD EXPERIENCE IN PIG HUSBANDRY

Members of the SSC gain firsthand experience in managing and caring for a small herd of pigs. This includes making critical management, financial, and marketing decisions, which are essential skills for anyone working with livestock and livestock producers. Through their involvement, students develop their observational skills and gain a deep understanding of typical pig behavior, eating habits, drinking patterns, play activities, and overall health. This immersive experience is crucial for those who aspire to work in animal husbandry or veterinary medicine.

COMPREHENSIVE HEALTH MANAGEMENT PRACTICES

SSC members are actively involved in ensuring the health and well-being of the pigs. They participate in weighing, deworming, and administering vaccinations, which helps them understand the importance of disease prevention and health management in livestock. SSC members learn about and closely follow biosecurity protocols and best practices for maintaining animal health, which are critical skills for future producers and veterinarians.

EDUCATIONAL ACTIVITIES AND PROFESSIONAL DEVELOPMENT

In addition to daily pig care, SSC members engage in various educational activities, including workshops and seminars. These activities provide insights into the latest advancements in swine production, health management, and market trends. By participating in these activities, students broaden their knowledge and skills, making them well-equipped for careers



SSC members. Front row (L to R): Faye Hayden, Keliann Stephens, Taylor Miller. Middle row (L to R): Dana Oehler, no longer a member. Back row (L to R): Ethan Leonardo, Seniah Flesher, Belicia Guzmán, Darlena Schmitt, Ashlee Jacobs, no longer a member. Not pictured: Chiron Susee, Sharon Quiles Trefois

Swine Cooperative (SSC)?

Industry Professionals and Veterinarians

in the swine industry or veterinary medicine. Additionally, SSC members are welcomed at the Washington Swine Producers meeting each year and are invited to give a presentation about their activities.

SELF-SUSTAINING OPERATION

The SSC is a self-sustaining organization. Members sell pork and bacon to fund their operation, ensuring that the cooperative can continue to purchase pigs and feed for the next semester. The sale of pork and bacon not only supports the financial health of the SSC but also teaches members valuable business and marketing skills. By managing the entire process—from raising pigs to selling products—students learn the importance of self-sufficiency and entrepreneurialism in the agricultural sector.

A COLLABORATIVE LEARNING ENVIRONMENT

The SSC offers a collaborative learning environment where students can lead and learn from each other. Most members join with little to no livestock experience, and the cooperative provides an avenue for peer-to-peer learning and mentorship. With guidance from their advisor and support from local swine producers, SSC members can develop their skills and confidence, preparing them for successful careers in the swine industry or veterinary medicine.

Overall, the Student Swine Cooperative is an exceptional platform for students to gain practical experience, develop professional skills, and prepare for their future careers in the swine industry or veterinary medicine. Its self-sustaining model ensures that members are not only learning about pig husbandry but also gaining valuable business acumen.

WHO CAN JOIN? HOW TO JOIN?

Each fall, SSC invites applications from students interested in joining the group. Applicants undergo interviews, and a total of 14 students are selected to join the SSC group for the year. While Animal Science majors make up the majority of the organization, all students are encouraged to apply. Applicants should have a genuine interest in the experience and be willing to perform the work, rather than simply add swine experience to their resumé or vet school application.

COMMENTS FROM MEMBERS

Overall, SSC members emphasize the rewarding experiences, knowledge, and connections formed

through their involvement with the co-op. Several members shared their experiences.

"Learning from experts and collaborating with SSC members to ensure the well-being of the pigs has given me experiences and knowledge that I will carry with me throughout my life."

-Dana Oehler

"I have been a part of SSC for four years, during which I have had incredibly rewarding experiences. I have formed valuable connections, developed my networking and leadership skills, and gained practical experience working with pigs. I take great pride in being a member of SSC."

-Faye Hayden

"Raising market hogs has been a great experience, and SSC has helped me learn swine husbandry and connect with other swine enthusiasts."

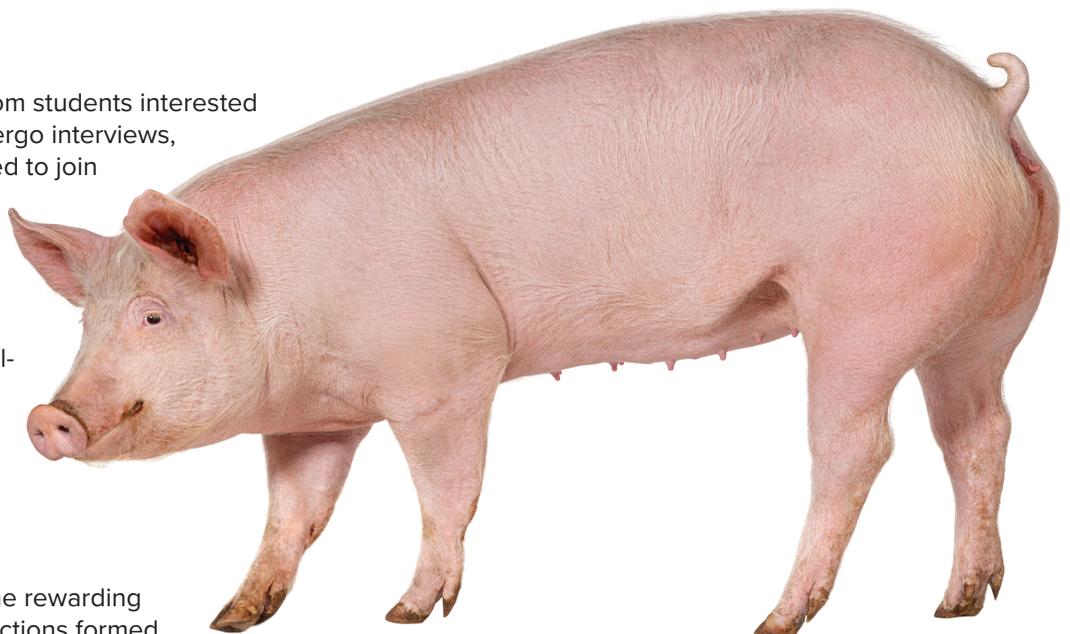
-Ethan Leonardo

"I joined the Student Swine Co-op in my first year at university to enhance my knowledge and passion for pigs, along with the responsibilities involved in raising them. The most rewarding aspect of this experience has been networking with professionals in the swine industry at the Washington Pork Producers meetings, as well as connecting with fellow students who share a similar interest in swine production."

-Seniah Flesher

"My favorite part of SSC is making connections with people in my major and forming lasting friendships. SSC has provided me with valuable animal and human experiences that will benefit me for life."

-Keliann Stephens





Looking for help at the Knott Dairy Center?

Just ask for...

The Knott Dairy Center (KDC) has recently come under new management, overseen by Kelci Scharff and Kelsie Magnuson. In September 2024, Kelci Scharff was appointed as the manager of KDC, while Kelsie Magnuson was promoted from her role as a day milker to the position of assistant manager.

Neither of the two young women had extensive dairy experience prior to earning their BS degrees in animal science from the University of Idaho (Scharff) and Oregon State University (Magnuson). Both individuals are highly enthusiastic and foresee a promising future for the WSU Knott dairy.

KELCI SCHARFF, MANAGER

Scharff, originally from Spokane, Washington, grew up raising beef calves on her grandfather's farm. After high school, she served as a Washington FFA state officer for a year, then attended Northwest College in Powell, Wyoming, on a livestock judging scholarship. She subsequently moved to Moscow, Idaho, to study at the University of Idaho (UI), switching her focus to dairy production and earning a bachelor's degree in animal and veterinary science: dairy production in May 2022. Before becoming WSU's dairy manager, she was the assistant manager at the UI dairy.

"I applied for the position of WSU dairy manager because I felt I had become too comfortable in my role at the UI dairy," Scharff stated. "I wished to continue my professional development, and

this position represented an excellent next step in my career."

KELSIE MAGNUSON, ASSISTANT MANAGER

Magnuson, a resident of Scappoose, Oregon holds a BS in animal sciences from Oregon State University, which she obtained in September 2023. Prior to her graduation, Magnuson gained valuable experience working at the OSU dairy, where she discovered her passion for working with dairy cows. In December 2023, she joined WSU as the KDC day milker and has since been promoted to the role of assistant manager, a position she is very enthusiastic about.

Scharff and Magnuson oversee the management of approximately 160 milking cows at KDC. The majority of the milk produced is purchased by the WSU Creamery, where it is utilized in the production of dairy products including Ferdinand's ice cream and Cougar Gold cheese.

Scharff is responsible for managing the cow herd, which includes herd health, reproduction, and production as well as supporting research and overseeing the full-time staff, including Magnuson, two milkers, and a feeder. Other responsibilities involve coordinating with the Creamery and construction crew, communicating with vendors, maintaining connections with the WSU veterinary hospital and other departments on campus, and educating students about dairy management. Magnuson supervises up to 15 part-time employees, primarily

WSU undergraduates, who handle many of the immediate and essential daily tasks required for the efficient operation of the dairy.

The initial transition to managing the WSU dairy was overwhelming. Scharff said it was like drinking from a firehouse. She now feels that things are progressing more smoothly now that she has familiarized herself with the operations and settled into her role.

"Coming in as a young manager was a little difficult, but I was hired to do the job and feel like I earned it," she said. "The biggest challenge was adapting to a new breeding management program."

The UI dairy employs a seasonal breeding approach, utilizing an estrous synchronization protocol to ensure all cows come into heat simultaneously for concurrent breeding. In contrast, WSU's dairy does not use synchronization; instead, it breeds cows throughout the year, requiring staff to monitor for signs of heat and breed accordingly.

Magnuson's transition to assistant manager was smooth. "Kelci and I meshed well, so adapting to a new manager was easy," Magnuson said. "Starting as assistant manager was a little challenging because my coworkers had to adjust to me as their boss."

Their combined expertise has increased conception rates, enhanced milk quality, and secured multiple milk premiums from the WSU Creamery. These achievements were made possible through the

Kelci or Kelsie

implementation of various management changes.

"We kept cows standing post-milking to decrease somatic cell counts and mastitis," said Scharff. "We also improved employee accountability, colostrum management, and record keeping.

KNOTT DAIRY CENTER UPGRADES

Scharff and Magnuson are pleased with the dairy's new barn construction and reorganization plans, which will enhance animal welfare and expand educational opportunities. The perimeter drive has been paved to prevent mud issues during wet weather. In March 2025, a compost bedded-pack barn was completed for young stock and dry cows. Future upgrades include renovating the heifer barn with flexible pen layouts, adding a handling facility for safer veterinary treatment and research sample collection, and improving other pens for better animal welfare and management efficiency.

The future of the KDC is in good hands. "Kelsie's promotion recognizes her hard work, while Kelci brings fresh ideas and energy," Department Chair Gordon Murdoch said. "The team has worked diligently to introduce cattle into the newly constructed barn and established updated reproduction protocols and herd health standards," he continued. "Their dedication to conditions for the dairy cattle enriches teaching, research, and production at KDC, which supplies high-quality milk for the WSU Creamery. Kelci and Kelsie show how commitment leads to institutional pride."

Veterinary Field Mission to Costa Rica was an Amazing Experience!



Keliann Stephens

Studying abroad had never been on Keliann Stephens's radar until she heard about a veterinary field training mission in Costa Rica operated by the Maderas Rainforest Conservancy (maderasrfc.org). This program was designed to expose pre-veterinary students to the challenges of veterinary medicine in a developing country.

"I've never been abroad and haven't even traveled far from home," she said. "But I decided the experience would be great for me and would be a real test to see if this is what I want to do."

So, the animal sciences junior from Moses Lake applied and was accepted for a session in July 2024. She flew to San Jose, Costa Rica, and met up with 18 other undergraduate students from around the U.S. The group traveled to the La Suerte Biological Field station in northeastern Costa Rica, located in one of the most biologically diverse regions in the world, home to thousands of plant and insect species along with hundreds of species of amphibians, reptiles, birds, and mammals. They shared rooms in housing at the field station and quickly learned how to amuse themselves without any cell phone service.

"Some people went through phone withdrawals because there was no cell service where we were," Stephens said. "I thought that was great. We did what most people did before technology and played board and card games all night."

For nine days, Stephens collaborated with local veterinarians and other volunteers in the Costa Rican rainforest, providing medical care to large and small animals in need. Initially, she attended classroom sessions where she acquired fundamental clinical knowledge, including diagnostics and treatment methodologies. Subsequently, she participated in hands-on clinical work, filling out paperwork and performing supervised physical examinations on dogs and cats. This included weighing animals, estimating body condition scores, measuring body temperatures, collecting heart and respiratory rates, and assessing lymph node sizes. She conducted fecal flotation tests to diagnose internal parasitic infections and dispensed medications to pet owners. Additionally, she gained experience in preparing small animals for surgery, observed veterinarians as they spayed and neutered dogs and cats, and assisted in the surgical recovery station. During the large animal day, the volunteers accompanied the veterinarians into the field, learning how to palpate cows for pregnancy diagnosis and assisting with dehorning and deworming procedures.

The program also included a field day, allowing Stephens and the other volunteers to see more of the rainforest and other local surroundings. They were able to observe sloths in their natural environment and witness the release of a turtle back into the ocean.

"This was the most incredible experience ever," Stephens said. Despite not receiving any college credit for the mission, she emphasized, "It was a cool learning experience, and I highly recommend it to everyone!"

Stephens is finishing her junior year and is busy with the Student Swine Cooperative, starting her vet school application for fall 2026, and considering another veterinary mission trip this summer in Ecuador. Her experiences in the South American rainforest will aid her in writing a compelling vet school application essay.

Graduate Students in Animal Sciences:



Graduate students study the effects of obesity in pregnancy.

*Front row (L to R): Xinrui Li, Sharmeen Islam, and Chaeyoung Shin
Back row (L to R): Zhongyun Kou, Md Nazmul Hossain, Li-Wei Chen*

Dr. Min Du's lab group is studying how obesity in pregnant women can affect the long-term metabolic health and development of their babies. They are using mouse models to understand these effects on the brain, muscles, bones, fat tissue, and red blood cells. **Md Nazmul Hossain**, a PhD candidate from Magura, Bangladesh, is researching how obesity during pregnancy affects the development of embryos by examining the cells at different stages. **Le-Wei Chen**, a PhD student from Taipei, Taiwan, is investigating how obesity causes inflammation in the fetus's brain, which can interfere with normal brain development. **Sharmeen Islam**, a PhD student from Mymensingh, Bangladesh, is looking into the molecular reasons why obesity can lead to muscle problems in babies. **Zhongyun Kou**, a PhD student from Yunnan, China, is studying how obesity in mothers affects the formation of red blood cells in the fetus using advanced techniques to analyze early-stage blood cells. **Xinrui Li**, a PhD student from Shangxi, China, is researching how fat cells develop and accumulate fat, focusing on how a specific regulator called H19 affects this process. **Chaeyoung Shin**, a PhD student from South Korea, is examining how exercise can help prevent and manage polycystic ovary syndrome (PCOS).



Research group aims to identify effective conservation strategies and enhance the resilience of fish species in changing environmental conditions. (L to R): Graduate students Max Butensky, Chaya Gaberria, Sabrina Haney, and Tad Iritani, and post-doctoral fellow, Shubhankar Sicar

Dr. Mike Phelps' team is a diverse group of researchers dedicated to various aspects of fish conservation and physiology. **Tad Iritani**, an MS student from Seattle, is focused on conserving Pacific Salmon, driven by his lifelong passion for fishing. **Shubhankar Sicar**, a virologist from Bareilly, India, joined the lab in June 2022. He has a PhD from Amity University, Noida, India, and is involved in advanced molecular research investigating infectious diseases and fish reproductive physiology. **Max Butensky**, a PhD candidate from Los Altos, California, is studying the causes of salmon death after spawning, with a particular focus on steroid hormones and their role in gene expression. **Sabrina Haney**, a PhD candidate from Ogden, Utah, is researching the drivers of speciation in sharks and the role of epigenetics in differential behaviors and reproductive modes. **Chaya Gaberria**, an MS student from Mukilteo, Washington, studies the biological and physiological mechanisms behind fish respiration and oxygen use, aiming to improve the tolerance of fish to oxygen depletion in aquatic environments.



Graduate students research reproductive diseases in organic dairy cows. (L to R): Priunka Bhowmik, Adriana Zaragoza, Francisco Martinez

Priunka Bhowmik, a PhD student from Dhaka, Bangladesh in **Dr. Zhihua Jiang's lab**, together with **Adriana Zaragoza**, an MS student from Los Angeles, California, and **Francisco Martinez**, a PhD student from Mexico City, Mexico, both in **Dr. Martin Maquivar's lab**, are examining how endometritis and metritis affect fertility, culling rates, and economic profitability in organic dairy farms. Their research will explore the impact of environmental factors, such as animal management, nutrition, and physiological states, alongside genetic variation on reproductive traits. The findings from this study are expected to provide valuable insights for future genomic research, aiding in the development of strategies to mitigate reproductive disorders and improve fertility in both organic and conventional dairy farms.

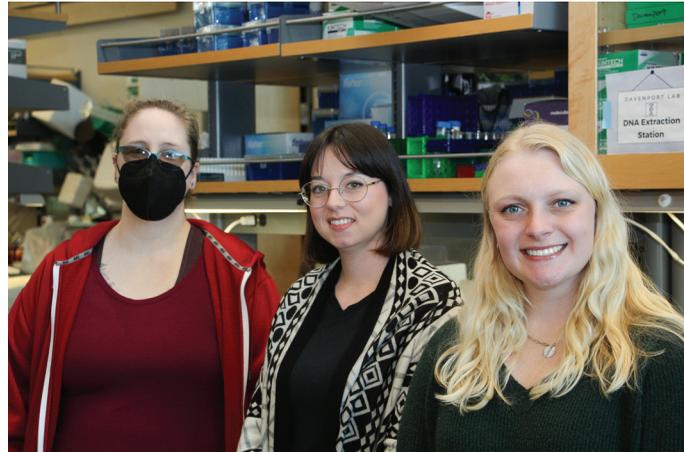
Future Leaders in Applied & Basic Research



Graduate students' research aids dairy cattle health and environmental sustainability.

(L to R): Valerie Achziger, Isabela Carrari

Graduate students in **Dr. Marcos Marcondes' lab** group are investigating the use of naturally occurring feed additives to reduce enteric methane production from dairy cows. **Valerie Achziger**, an MS student from Eastvale, California, is researching the effect of zeolite, a naturally occurring mineral made of microporous aluminosilicates, on methane production in a simulated rumen fermentation system. **Isabela Carrari**, a PhD student from Curtitiba, Parana, Brazil, is studying the effects of feeding seaweed (*Asparagopsis taxiformis*) on digestion, performance, and enteric methane emissions in dairy cows.



Graduate students use genomic selection tools to improve the health, productivity, and economic viability of cattle populations.

(L to R): Ashley Destin, Morgan Wagle, Allison Herrick

Allison Herrick, a PhD candidate in **Dr. Holly Neibergs' lab** from Bliss, New York, is focused on traits in beef and dairy cattle that are economically significant, specifically reproductive traits in Wagyu cattle to ensure a productive population that meets market demands for beef. She also investigates respiratory disease traits and genomic selection tools to help producers maintain healthier herds, boost profitability, and reduce the need for antibiotics. **Morgan Wagle** and **Ashley Destin** are both MS students in **Dr. Kim Davenport's lab**. Wagle, from Edgerton, Missouri, is studying how parental bias and placental gene expression contribute to placental development and pregnancy loss in cattle. Destin, from Spokane, Washington, is researching DNA methylation and RNA gene expression in placental tissues to understand the disparity between fertilization and pregnancy rates in cattle.



Graduate student Michee Van Rooyen is developing a pan-transcriptome for sheep.

Michee Van Rooyen, an MS student from South Africa working in **Dr. Zhihua Jiang's laboratory**, is developing a pan-transcriptome for sheep. A pan-transcriptome integrates the transcriptome, which is the complete set of RNA molecules in an organism, with the pan-genome, which encompasses the total set of genes within a species. This resource can be utilized to investigate the relationship between an animal's genetic composition (genome) and its observable physical characteristics (phenome), thereby aiding in the understanding of species/sub-species divergence, sexual dimorphism, and disease resistance.

Outstanding Undergraduate Students



JASLEEN DHALIWAL
AnSci Outstanding Sophomore



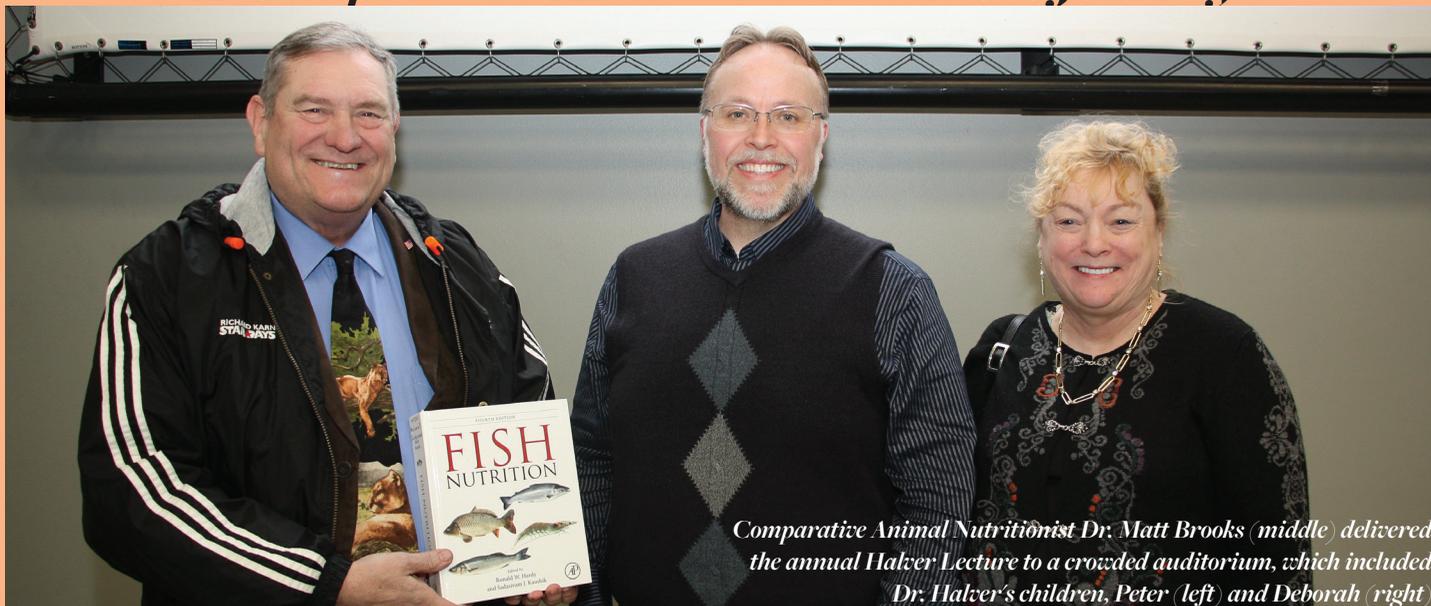
AVERY LYONS
AnSci Outstanding Junior



MACKENZIE POTTER
Ralph E. Petty Family Outstanding Senior

Annual Halver Lecture

A Comparative Animal Nutritionist's Journey



Comparative Animal Nutritionist Dr. Matt Brooks (middle) delivered the annual Halver Lecture to a crowded auditorium, which included Dr. Halver's children, Peter (left) and Deborah (right)

The 2025 Halver Lecture in Comparative Nutrition, funded by Dr. John E. Halver III's family, was delivered by Dr. Matthew Brooks on February 25 to students, staff, faculty, and Halver's children, Peter and Deborah. Dr. Halver, a chemistry graduate of Washington State College in 1944, is known as the "Father of Fish Nutrition" and was dedicated to promoting comparative nutrition to undergraduates.

"We stand on the shoulders of giants like Dr. Halver," Brooks said at the beginning of this presentation. "His contributions have laid the foundation for our advancements in comparative animal nutrition today."

Nutrition for exotic animals is less advanced compared to domestic animals. Though fundamental principles are similar, species differ greatly in requirements, digestion, and metabolism. Comparative nutrition addresses these differences by considering an exotic animal's natural food selection, seeking behaviors, and sometimes unique digestive anatomy that requires strategies to create diets that support their welfare outside their natural habitats.

Brooks' lecture, "You Never Know Where the Road Will Take You When You Learn to Feed a Zoo," outlined his transformation

from aspiring zoo veterinarian to comparative animal nutritionist, sharing notable experiences along the way.

His interest in exotic animals began as a child after visiting a zoo in South Carolina, inspiring him to become a zoo veterinarian. He started his education at Clemson University, then transferred to Cornell University, where he was introduced to exotic animal nutrition. Hearing about his passion for rhinos, Brooks' professor arranged an internship at the Fort Worth Zoo.

During his internship, Brooks worked in the nutrition lab, studying if tannin-rich feeds could alleviate iron overload syndrome (IOS) in black rhinoceroses. IOS, which leads to organ damage due to iron accumulation, is relatively common in rhinos kept in zoos.

"I spent a lot of time looking at what went in and what came out of the rhinos," Brooks said. "I ground up a lot of rhino poop!"

After his internship, Brooks decided against veterinary school, opting for a career in exotic animal nutrition. He graduated with a BS in animal science from Cornell University in 2003 and worked in the Fort Worth Zoo's nutrition services department. Seeking further growth, he earned an MS in nutrition from Texas A&M

University in 2007 and a PhD in ruminant nutrition from the University of Missouri in 2010.

In 2012, Brooks was appointed as the nutritionist at the Oregon Zoo in Portland where he enhanced the nutritional welfare of all the zoo's animals by applying a comparative approach informed by his post-graduate education in animal science. Among his contributions, he investigated the effects of incorporating tannin-rich grape pomace into the diets of rhinoceroses. He also employed ensiling techniques to preserve feed for winter consumption. His collaboration with Dr. Troy Tollefson at Mazuri Feeds, a WSU alumnus and a former Halver lecture invited speaker, led to the development and testing of experimental diets for polar bears. Additionally, he promoted carcass feeding for both nutritional and behavioral enrichment in many animal exhibits, receiving significant approval from visitors.

In 2019, Brooks assumed the position of Director of Nutritional Services at the Indianapolis Zoo, where he addressed various nutritional challenges for the animals. For instance, Joy, a sea lion who exhibited bulimia due to stress when integrated into a group, benefited from the collaborative efforts of veterinarians who prescribed appropriate medication

for her anxiety and Brooks who formulated a diet, which enabled her to regain normal weight. Similarly, Sue, a chimpanzee previously living on fast food as an illegal pet, presented with obesity and type 2 diabetes. Following her confiscation, Brooks dedicated over three months to acclimating her to a proper chimpanzee diet, thereby improving her health. He also collaborated with the zoo's veterinary team to diagnose and treat a mysterious illness in an Asian pheasant. After the vets identified and surgically removed an eroded penny from the bird's digestive tract, Brooks concluded it had zinc poisoning.

The COVID-19 pandemic precipitated another shift in Brooks' career. After being let go from his role at the zoo, he established his own comparative animal nutrition consulting company and currently serves as the small animal nutritionist for Nom Nom, a U.S.-based fresh pet food company. Furthermore, Brooks is the president-elect of the Comparative Nutrition Society.

Reflecting on his career, Brooks remarked, "The journey to becoming a comparative nutritionist has been an intriguing one. It is essential to continuously move forward, adapt, and develop problem-solving skills."



Bruce L. Golden

Distinguished Graduate

We are pleased to announce that Dr. Bruce L. Golden (BS '81, MS '83) has been named the 2025 Distinguished Graduate in Science, Education, and Technology. A native of California, Dr. Golden received his PhD in animal breeding and genetics from Colorado State University (CSU) in 1991.

ACADEMIC CAREER

Golden was a faculty member at CSU for 20 years and taught classes to more than 700 students. He advised 91 undergraduates and trained 5 MS students, 10 PhD students, and 3 postdoctoral fellows.

At CSU, he led a research program focused on trait development and expected progeny differences (EPDs) for traits such as docility, heifer pregnancy, and stayability. He successfully secured nearly \$3.9 million in extramural funding as either the primary investigator or co-investigator. He established a Beowulf cluster computing platform to facilitate large-scale genetic prediction work in livestock. Additionally, he developed the Animal Breeder's Tool Kit (ABTK), a suite of computational tools for genomic analyses, and co-founded the Center for Genetic Evaluation of Livestock (CGEL) in 1985, which continues to be utilized by breed associations and producer groups globally for cattle genetic evaluations and research. In 1991, he founded the Animal Genetics Discussion Group, a listserv dedicated to animal scientists and geneticists worldwide.

From 2007 to 2014, Golden was Head and Professor of Dairy Science at California Polytechnic University in San Luis Obispo. He conducted research on genetic effects on dairy production traits, revised the dairy production curriculum courses, taught and guided over 250 undergraduate students, and secured donations amounting to more than \$5 million for dairy science education. Additionally, in 2008, the Cal Poly dairy products judging team participated in regional and national contests under his guidance.

INDUSTRY CAREER

Golden asserted that an animal breeder should possess skills in computer programming. He has successfully leveraged his computing expertise into valuable assets over the years. In 1998, he co-founded Optibrand, a technology company originating from CSU, which developed advanced biometric animal identification and tracking solutions. He held the position of Chief Scientific Officer from 1998 to 2003 and Chief Executive Officer from 2003 to 2007. In 2015, he established Theta Solutions, LLC, where he served as CEO and President. Theta Solutions specializes in conducting sophisticated genetic and genomic analyses of extensive data sets across various species, including cattle, sheep, chickens, horses, and dogs, utilizing cutting-edge GPU accelerated tools.

HONORS & AWARDS

Golden's work in animal breeding and genetics earned him recognition as one of the 50 Most Influential People in Red Angus history (2004) by the Red Angus Association of America. Among his many honors, he also received the Beef Improvement Federation Pioneer Award (2009), CSU Technology Transfer Award (2005), EuroTier Gold Medal Award for New Technology (2004), Entrepreneur Awards of Northern Colorado's Entrepreneur of the Year, Bravo! (2004), Beef Improvement Federation Distinguished Service Award (1998) and the Red Angus Association of American Industry Service Award (1995).

Golden has divested his interests in the companies he established and developed and has retired from academia. He remains engaged in consulting activities but predominantly devotes his time to golfing and leisure pursuits. Golden and his wife, Mary, whom he met at Washington State University, have been married for nearly 42 years. They reside in California's wine country and enjoy their life together.

Raymond "Ray" Wright, Jr.

March 9, 1947 - October 20, 2024

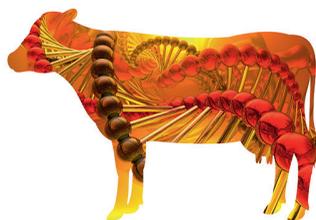
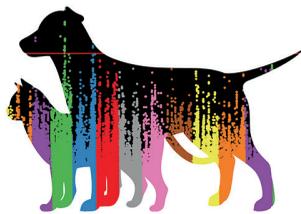
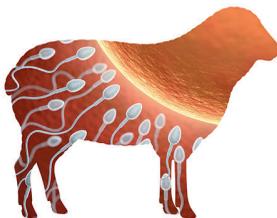
Dr. Wright began working in the Department of Animal Sciences at WSU in 1975 and served as Department Chair from 1997 to 2006. He was active in teaching, research, and public service throughout his career. He retired from WSU in 2013. We extend our deepest gratitude for his invaluable contributions to the department.





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