

1-2015

## AVS Corner, January 2015

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# AVS CORNER

TEACHING • RESEARCH • EXTENSION

JANUARY 2015

## INSIDE THIS ISSUE:

- 2014 TURKEY PROJECT
- CHANGING FACILITIES AND FACES
- INTERNATIONAL STUDENT WORK
- ALUMNI AND FACULTY SPOTLIGHTS
- DID YOU KNOW?
- AND MUCH MORE!



**SPECIAL DELIVERY:** Rebecca Watson, Hayley Boyd, Kyle Caldwell and Megan Kelley continue the proud tradition of delivering a turkey to the President's home, received by Mrs. Clements for Thanksgiving.

## Let's Talk Turkeys

By MEGAN KELLEY

A flock of pure white birds stand clustered at the front gate of the outdoor pen. Two students clad head to toe in bio-secure farm gear pile feed into large bins, fill buckets with clean water, and check the health of the flock.

The Turkey Project had begun.

The Clemson University Poultry Science Club (CUPSC) raised and harvested free-range turkeys for the Thanksgiving holiday for their annual Turkey Project. Every morning, CUPSC students visited the outdoor pens housing the turkeys to make sure the birds were safe and had access to food and water.

Harvesting the turkeys the weekend before Thanksgiving was a department-wide endeavor; students, CUPSC members, and AVS faculty all participated to ensure that the process was up to state and federal standards. The fresh-dressed turkeys averaged 19.45 lbs and were distributed by the students to their respective buyers out of Newman Hall. As is tradition in the CUPSC, a turkey was presented to the President of Clemson University and his family at their home on the Clemson campus.

The Turkey Project does more than provide a bird for families during the holidays. It provides students with hands-on husbandry experience and allows them to have sustained

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## Notes From the Corner Office

Hello, and welcome to our 2nd edition of the AVS Corner!

Welcome to our 2nd edition of the AVS Corner. Since the 1st edition, Clemson University, CAFLS, and AVS have seen big changes in personnel. The Department has worked with the Stakeholder Advisory Board and students to start the strategic planning process. We have updated our Vision and Mission statements, identified new goals, and have started discussions concerning curriculum. This process will extend through next semester, so stay tuned for an update.

Clemson University has inaugurated its 15th President, Dr. James P. Clements. Shortly following inauguration, a new Provost, Dr. Robert Jones, was hired in September. Both individuals bring an understanding of the Land Grant Mission and importance of Agriculture. On the College front, Dr. Thomas Scott retired as Dean of CAFLS and returned to AVS, where he is teaching a leadership course (CAFLS Plus), continuing his research efforts in poultry and immunology, and will be teaching Animal Health in the Spring of 2015. Dr. George Askew, Vice President for Agriculture was named the Interim Dean of CAFLS, and will serve in that capacity until a new Dean is hired. The latter process is slated to start sometime next year.

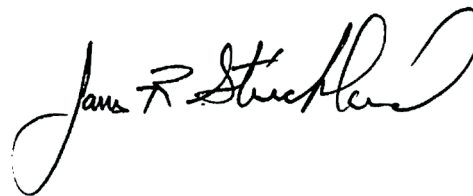
At the Department level, we promoted Mrs. Kathy Still from Student Services Program Coordinator to Student Services Manager to fill the role that Ms. Roxanne Bernard vacated. The department then recruited Ms. Stephanie O'Brien to fill the position of Student Services Program Coordinator. Dr. Heather Dunn was promoted from Lecturer to Senior Lecturer. We hired Dr. Tiffany Wilmoth to the position of Assistant Professor, Reproductive Physiology. Dr. Jeryl Jones will be joining our faculty ranks as a Professor of Physiology.

On a sad note, my mentor, colleague and

friend, Dr. Dee Cross (Professor of Animal Nutrition - retired, AVS) passed away at the age of 68 on August 2, 2014 after battling pancreatic cancer for 10 months. Many alumni will remember Dr. Cross from the courses he taught (Animal Nutrition), research opportunities, his service to students, his cheerful, helpful personality and the Christmas parties he hosted at his house. Stakeholders know Dr. Cross for his contributions to the cattle and equine industries. He will be remembered for his development of a treatment for equine fescue toxicosis using the drug, domperidone. For me, Dr. Cross will always be remembered as a caring and compassionate mentor to whom I am indebted for the large part he played in providing me the skills and knowledge needed to allow me the success I have experienced in my own career and personal life. Please keep his family in your prayers this holiday season as they most assuredly will miss him all the more.

In closing, thank you to Dr. Johanna Johnson and our committed student editorial board for compiling this newsletter. I want to thank all of you for your interest and kind words returned to the department following our 1st newsletter. Please let me know if you have comments to share or ideas that would make the AVS Corner more appealing and useful.

May God Bless each of you,  
Jim Strickland



Department Chair, AVS



JANUARY 2015

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interaction with the animals from the poult (young turkey) stage to processing. The students gain an appreciation for the care that goes into food animal production and the measures that must be taken to ensure the birds are safe for human consumption.

Proceeds from the project benefit the CUPSC in their travels to poultry blood testing clinics, 4H shows, and pullet sales, where they may work as judges for showmanship and pullet quality. Turkey project sales also help fund travels to the annual International Production and Processing Exposition and provide money for the installment of future turkey project endeavors. This year's success, 145 birds sold to satisfied customers, means next year's opportunity!

“This is the most successful fund raising project in the College of Agriculture, and it incorporates a hands-on approach to really teach students how to successfully manage a project.”

- Dr. Mickey Hall



**MAKING A DIFFERENCE:** AVS grad students ready to drop off nearly 700 lbs of food collected this fall during their can drive to benefit Clemson Community Care. Read more about the GSA on pg. 11!

## Changes in the AVS Farm Facilities



### SHEEP AT THE NEW BEEF FACILITY

#### THE NEW CLEMSON SHEEP FARM OPENS ITS DOORS!

Where the Blue Ridge yawns its greatness, where the Clemson sheep play! In early September, the doors opened at the Small Ruminant Research Building, the newest farm addition at Clemson University. This project has been anticipated for many years, and we are so excited for the opportunities it promises to bring.

The up-to-date facility has many amenities that were not included in the old sheep barn, such as a locker room for workers and an office with a large window overlooking the inside pens. It has six large pens on the inside, all of which open to an outside pen if desired. The pens all have inside hay and grain feeders, providing easy access for the sheep as well as the workers. New lambing pens, equipped with heat lamps, are available for facilitated access to lambs and mother ewes during the spring lambing season. Automatic watering troughs are located in each inside pen, as well as each of the eight large pastures. Each outdoor pasture is lined with brand new wood and electric fencing, and can be split into smaller pastures for different flocks if necessary. Shade sheds are provided in each pasture for the sheep to rest under during the hot summer months. In addition to great housing for the sheep, we also have brand new chutes to work the sheep in during vaccinating, deworming, hoof trimming, and more. A large feed and tool shed has been built outside of the barn for storage of feed, equipment, and other supplies.

Individuals involved in the ruminant industry, Clemson faculty, alumni, and staff, as well as anyone else interested in new developments at Clemson, were all invited to tour the new facility during the Sheep Barn's grand opening in September. Visitors were ecstatic to see the innovative new barn and loved being able to take ideas for their own farms home with them.

With this brand new facility, many new doors have been opened for small ruminant projects at Clemson University. We are excited to incorporate new genetics into the flock in the coming years and are hoping to have an increased number of sheep in our flock. We hope all of this means new ruminant research projects and an increase in small ruminant activity at Clemson University.

-JENNIFER LANTZER

### THE BRICK BARN

#### DID YOU KNOW? - EXPERIMENT STATION DAIRY BARN

Did you know that the Sheep Barn, located across from the Hendrix Center, will soon be named the "Barnes Student Center"? The new moniker honors the Barnes family, whose donation to Clemson was intended for the purpose of creating a stress free environment for students to spend time, eat, and relax with friends. Barn renovations will be completed by fall 2016. One of the top priorities in the planning is to make sure that the agricultural and animal science heritage and history is upheld within the barn. A case for animal science artifacts and historical awards may be put into the plan for the main entryway as well as large wall photographs displaying pictures from many years past with animals, cadets and students. This is a great opportunity for new students and the rest of campus to be introduced to the history and importance of agriculture at Clemson University.

- The original structure was built in 1902
- Currently referred to as the sheep barn, though it was originally a dairy barn
- For the past several years, the barn has been used for maintenance equipment storage
- The barn was a model for the 1903 "The James Way" plan book written on how to build and equip a practical dairy barn
- This style of barn was a transition from the old Mortise and Tenon (pre 1900) with no windows and poor ventilation to the Plank Frame (post 1900) with lots of windows, a ventilation system, and hay loft with hay hoist
- Most of the inside of the barn has retained its original materials, which match the James Way Plan
- The barn is listed on the national historic registry and will stay there even after the completion of the upcoming project

-CURT BERRY



## Students in International Travel

### VOLUNTEERS FOR INTERCULTURAL AND DEFINITIVE ADVENTURES

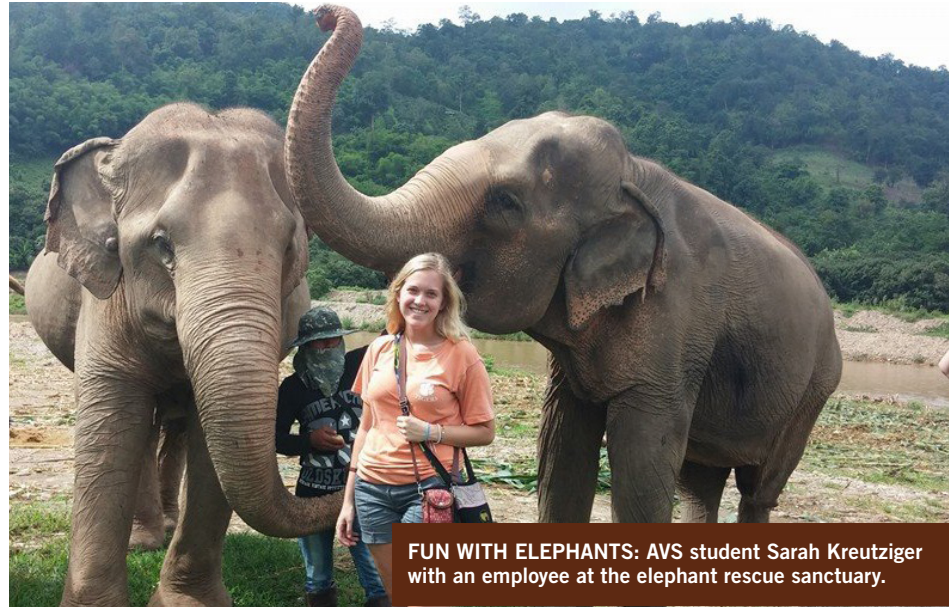
#### GREAT OPPORTUNITIES THROUGH VIDA

Volunteers for Intercultural and Definitive Adventures, or VIDA, is an international volunteer organization that took Clemson pre-medicine, pre-dental, and pre-veterinary students to Costa Rica and Nicaragua in May of 2014. About 20 of the students were pre-veterinary and involved in both small and large animal care. Our mission was to set up clinics in underprivileged communities to provide economical veterinary services as well as educational programs for local pet owners regarding spaying and neutering. We were all trained and supervised by Central American veterinarians and veterinary technicians to aid in conducting physical exams, pre-operation procedures, and surgery.

We were given the opportunity to learn very valuable lessons in animal medicine like preparing catheters, intubating, and learning about common diseases and parasites in Central America. We also received a lot of surgical experience by preparing sterile tables, monitoring anesthesia, and assisting during surgery.

The VIDA team traveled all around Costa Rica and Nicaragua in between clinical days, which provided great insight on how the countries function. It was a humbling experience for all involved. VIDA pop up clinics truly benefitted the communities as they provided services that clients would likely otherwise not have been able to afford.

-MADELINE ZUROWSKY



**FUN WITH ELEPHANTS:** AVS student Sarah Kreutziger with an employee at the elephant rescue sanctuary.

### MY SUMMER IN CHAING MAI

#### INTERNSHIPS AND EXPERIENCES ABROAD

This summer I traveled all the way to Chaing Mai, Thailand for a veterinary program through Loop Abroad. During the first week, I stayed at ENP (Elephant Nature Park), which is a rescue sanctuary for approximately 40 Asian elephants. Many of these elephants were landmine victims, abused, and/or logging and trekking workers. These amazing creatures are being given a second chance at a better life. While there, I participated in a wide variety of activities, including everyday care of the elephants, treating and medicating the elephants, tubing down a river, visiting a village school, cutting down corn stalks with a machete, and attending a Thai culture class.

During the second week, I stayed at the Spicy Thai Hostel, located in the true city of Chaing Mai. Most days consisted of driving out to ARC, a dog/cat shelter, to learn about some aspects of veterinary care. I learned how to draw blood for the first time, how to find and calculate a heart rate and respiration rate, how to diagnose and treat common canine/feline diseases, and how to carry out a heartworm test. I also observed a leg surgery that was performed on a dog that had been presumably cut with a machete, as well as an eye surgery that was done on another dog that was unable to fully open its eyes. Lastly, I assisted in two neutering surgeries by administering a pre-anesthetic and then scrubbing in for surgery. Needless to say, it was very hot wearing latex gloves, a face mask, and a hairnet in Thailand's summer climate, without air conditioning!

In our free-time, we were able to experience Thailand's culture. We visited the night markets, various Thai temples, and an orchid and butterfly garden. We also hiked up Doi Suthep Mountain (took 3.5 hours!), watched a cabaret show, swam in a waterfall, released paper lanterns, stayed at a Thai hotel, and walked through underground caves. One of my favorite things we did that week was visit Tiger Kingdom, a tiger reserve, where we were able to interact with tiger cubs, as well as full grown tigers. From a spontaneous road trip due to canceled flights, to meeting amazing people from all over the world, this trip was absolutely amazing and something I'll never forget.

-SARAH KREUTZIGER

## From the Field: Clubs & Organizations

### CLEMSON UNIVERSITY POULTRY SCIENCE CLUB

#### THE POSITIVE POWER OF POULTRY PEOPLE

The Poultry Science Club has continued its service to the community this semester through judging local shows, pullet sales, and blood testing. Judging 4H competitions allows students to share their poultry knowledge with the community and younger generations. Members of the club have traveled across the state with advisor Dr. Mickey Hall to gain experience in poultry public service. The club donated \$100 to Clemson's Habitat for Humanity project during the week of Homecoming and provided a local family in need with Christmas gifts. Club members also continue to collect can tabs for their Ronald McDonald House project. Next semester the club will travel to Atlanta, Georgia for the IPPE (International Processing and Products Exposition) to interview with poultry industry specialists for jobs and internships. Hopefully this year they will avoid the snow!

-TINA ROWLAND



### CLEMSON COLLEGIATE HORSEMAN'S ASSOCIATION HORSEING AROUND WITH CCHA

Clemson CCHA is a professional development association dedicated to educating our members on all facets of the equine industry. We expose our members to many disciplines of riding, as well as providing networking opportunities with equine professionals. This semester our members had the opportunity to tour Joey McRae's cutting/reining training center, a Friesian barn, and a working hunter barn. Each spring CCHA members have the chance to attend the American Collegiate Horsemen's Association's national convention. Convention is hosted by a different university each year and allows students to make lasting friendships with other horse enthusiasts from across the country! This spring's convention is being co-hosted by Texas A&M University and Sam Houston State University. Students will gain exposure to Texas's equine industry by visiting the Sam Houston Race Track, TAMU's Hildebrand Equine Complex, EquiFitness (horse health care center), and the Houston Livestock Show and Rodeo. In addition to learning about the industry, CCHA utilizes its resources to host two horse shows each year. These shows are CCHA's largest fundraisers. Summer's End Horse Show is held at the end of August. This year's show was a great success! Since its completion members have been working hard to prepare for our second show: Trotting 'Round the Tree Horse Show. This show takes place the week before winter break in December. Both shows offer open and hunter events as well as dressage and combined test competitions! Now fast approaching, the Trotting 'Round the Tree will be held at the T. Ed Garrison Arena on December 6th and 7th. We look forward to bringing you more club highlights and an update on Trotting 'Round the Tree's success in the spring!

-KELLY MCKINNEL





## From the Field: Clubs & Organizations



**CLEMSON UNIVERSITY LIVESTOCK JUDGING TEAM**

### THE LIVESTOCK JUDGING LIFE

If you visit the P&A you'll know you've come across a member of the judging team if they are pacing the halls or lingering in a quiet corner speaking confidently to themselves. The Clemson University Livestock Judging team of 7 undergraduate students, led by Ms. Richelle Miller, has seen great success this semester. Clemson's dedicated team practiced several times each week in preparation of contests traveling to farms in South Carolina, Georgia, and Tennessee in addition to observing livestock at the university farms. The team journeyed to Pennsylvania for the Keystone International Competition, Indiana for two Intercollegiate Contests, and Kentucky for the North American International Livestock Exposition. The team brought back ribbons and trophies for individual and overall team placings. They also enjoyed a visit to Hershey Park, a haunted corn maze and Churchill Downs. In the spring Ms. Miller will continue the livestock judging team with a new group of undergraduate students.

-TINA ROWLAND

### Block & Bridle

#### TAKING THE BULL BY THE HORNS

Block and Bridle has had a busy year full of exciting updates! The club recently purchased a smoker/cooker that will allow them to extend their outreach in the department and community by offering catering services and rentals for meetings and events; it's an investment their members are very excited about! This spring, the club will be hosting its 4th annual Bulls and BBQ, a fun-filled event with live music, a mechanical bull, a silent auction, and a BBQ dinner prepared by the club members. Last spring,

the event featured country musician Cody Webb and had a wonderful turnout! The club is also preparing to send a group of members to the National Cattlemen's Beef Association tradeshow and Cattlemen's College in February in San Antonio, TX. We are excited to be able to send members to these national events to connect with other agriculture advocates, students, and employers from across the country. Last spring, five Block and Bridle members attended the Block and Bridle National Convention in Missouri

and brought back a lot of new ideas for the chapter. This fall, a few members of the club helped with a Pickens County 4-H youth event. The members who attended brought horses and educated children about rodeo events and how to be safe around animals. The club is also hoping to host a barrel race this spring, as well as rodeo clinics. For more information or questions about the grill or any of our events, please contact the club's president, Curt Berry, at [chberry@g.clemson.edu](mailto:chberry@g.clemson.edu)

-JILLIAN MILOPOULOS

### PRE-VETERINARY CLUB

#### ALL CREATURES GREAT AND SMALL



The fall semester brought a variety of activities for Pre-Vet club members to learn about different aspects of the veterinary field, as well as the many opportunities offered at several veterinary schools. Guest speakers included representatives from the University of Georgia College of Veterinary Medicine (CVM) and Mississippi State University CVM, as well as a veterinarian from an emergency practice in Anderson, SC. In September, club members joined Dr. Alexandra Tracey of Palmetto Equine Veterinary Service and Dr. Vicky Bochyneck of Atlas Mobile Veterinary Services for a morning of equine dental work. Students learned the proper techniques for floating teeth, taking vital signs, and body condition scoring. Club members will have even more opportunities to explore options for their veterinary education and career during the spring semester. This includes club visits to a number of veterinary schools and a new lineup of fascinating guest speakers! As a fundraiser this year, the Pre-Vet Club assembled a farm calendar, showcasing some of the students' favorite Clemson animals. The club will be selling these calendars, in addition to t-shirts, pullovers, and adorable dog bows and bowties, throughout the spring. For more information about purchasing these items, please contact the club presidents, Jennifer Lantzer or Sonya Weeks, at [jlantze@clemson.edu](mailto:jlantze@clemson.edu) or [sonyaw@clemson.edu](mailto:sonyaw@clemson.edu).

-EMILY COOK

### THE SISTERS OF SIGMA ALPHA

The Sigma Alpha professional sorority has participated in many different philanthropic, professional, and sisterhood events over the last semester. Sigma Alpha welcomed nine new sisters to the sorority from the Alpha Tau rush class. Once a month, sisters participated in "Ag in the Classroom," where they visited a class of kindergarteners and told them about different topics in agriculture while completing a craft based on the information. The chapter participated in many professional events, including leadership seminars, resume writing workshops, and hosting guest speakers at chapter meetings. The sorority held a number of sisterhood events such as movie nights, dinner dates, a summertime pool party, a day of apple picking in the fall, and ice skating before fall break. The chapter has developed several avenues to carry on the memory of Sara Ann Comer, a sister of Sigma Alpha and an Agricultural Education Senior who passed away in September of 2013. They are currently selling cookbooks to raise funds for a 5K that will be held in her memory in the summer of 2015

—RACHAEL ROCKWELL AND CASEY WHEELER



### DAIRY SCIENCE CLUB DAIRY DAYS



Students at the Dairy Science Club auction!

The Dairy Science Club has been very active this past semester. The club had booths at Tiger Prowl, Bash at the Barre, and the CAFLS Tailgate where those attending got the chance to interact with a calf from the University's Dairy Farm. The show team was involved in the Anderson Livestock Show in September, bringing home ribbons in both showmanship and conformation. The club's Cow-Drop Fundraiser also occurred at the Anderson Show, where those who bought tickets hoped the cow would "drop a plop" on their square! One of the largest events of the semester was the show team's participation at the South Carolina State Fair in October. Show team members showed their heifers in both showmanship and conformation throughout the weekend where the team had two Reserve Champions. In October, the club had an exciting opportunity to work alongside the dairy farm in a cow auction at the dairy farm, selling concessions and getting the auction ready. We were working toward decreasing the milking herd size in order to perform renovations on the farm. Several members of the club competed in the North American Intercollegiate Dairy Challenge in November where they put their knowledge of the dairy industry to the test. Club social events this past semester included bonfires, farm tours, and a road trip to visit a haunted house and hay ride. The club designed new merchandise now available for sale including T-shirts, coozies, and croakies for anyone interested! For more information, please contact Reta Miller at [retam@clemson.edu](mailto:retam@clemson.edu).

—GRACE MURRAY AND CASEY WHEELER

### WAVS

#### A WORD FROM WAVS

The Women in Animal and Veterinary Sciences (WAVS) Living and Learning Community (LLC) has had an eventful semester so far getting used to the transition to life as Clemson AVS majors. Located on the third floor of Young Hall in the Shoeboxes, this year's group is closer than ever and has bonded beyond the planned activities that every WAVS group has experienced. The year began with a fun get-to-know-you hayride and "beach" party where everyone finally met their Lifeguards, or mentors, and learned a little more about who they were living with for the school year. In September, the girls put on their best professional

attire and impressed guests from the animal science industry with a lovely dinner at Brandini's in Pendleton. The most recent event took place at Glazed in downtown Clemson, where everyone painted ceramic milk cartons to take a break from mid-term studying. Amidst these events the group has grown close over weekly study sessions, camping out for the best football tickets, making s'mores, a few Disney jam-sessions, and 24/7 hall bonding time!

—ERIN SOLE



WAVS residents at the annual etiquette dinner not only learn more about professional etiquette, but also have the opportunity to network with industry professionals like Dr. Christy Belcher!

## AVS Spotlight

### GETTING CREATIVE WITH CREATIVE INQUIRY

#### Ruminant Nutrition

The Ruminant Nutrition Research Team provides an opportunity for the advancement of the teacher-scholar model at Clemson by integrating significant student learning experiences into an ambitious ruminant research program in the AVS department. Students have an opportunity to gain exposure to and experience with ruminant research first hand. Skills gained through this process will provide students with a critical understanding of how relevant components fit together and impact each other as well as real world applications of systematic research. Dr. Gustavo Lascano has established a collabora-

tion of graduate and undergraduate students focused on ruminant nutrition research. His research team includes six undergraduate and three graduate students working in teams. There are currently three projects underway with more to begin in the coming weeks. Graduate student Louisa Bowen is currently working on a project that focuses on determining the effects of feeding a high rumen undegradable protein ration with varying forage and concentrate ratios to heifers. Graduate student Prabha Ranasinghe's research examines improving the nitrogen utilization from the rumen degradable fraction using non-protein and true protein sources by assessing metabolic performance in dairy cattle.

Other collaborative research involves comparing digestibility of grasses across different in vitro methods. As renovations are made to the dairy research facilities and to the nutrition research laboratory, more projects will be getting underway. The team offers students hands-on experience in a unique situation, and encourages all members to view issues of ruminant production from a variety of perspectives and to actively seek out opportunities for multidisciplinary cooperation in research and in practice.

—CASEY LUCAS



#### Increasing Agricultural Awareness, One Spoonful at a Time

Dr. Heather Dunn and her undergraduate student team, including senior Tina Rowland, senior Megan Kelley, and junior Kerry McCrory, received a warm welcome as they presented their vintage spoon necklaces at the Will to Lead Campaign at the Botanical Gardens on October 3rd, 2014. The concept behind the "Spoon Project" is to encourage an appreciation for the hands that went into making a meal. The team uses the agricultural mechanic workshop in McAdams Hall to bend, shape, and polish vintage sterling silver spoons into works of art, primarily necklace pendants. Students are working to increase inventory as these necklaces are currently available on Clemson's Marketplace page. All proceeds from this project go toward funding undergraduate research to increase agriculture awareness within the Animal and Veterinary Sciences Department.

—TINA ROWLAND



#### Thornwell Home for Children Creative Inquiry Farm Project

Drs. Heather Dunn and Tom Scott are teaming up with undergraduate students to bring agriculture back to the Thornwell Home in Clinton, South Carolina. This historic establishment, founded at the end of the Civil War, provides a stable home and a familial environment for young boys and girls from South Carolina, Georgia, and Florida. At one time, the Thornwell family was agriculturally self-sustaining with a fully functioning dairy and flourishing farmland, but during the economic recession, these operations were discontinued. In an effort to reintegrate the benefits of agriculture into the lives of Thornwell's young residents, the home's directors reached out to the Clemson AVS department for help, which sparked the development of a new CI project. During the fall semester, the CI team assessed and documented the initial state of the 300-acre area of land in order to outline a plan of improvement, and throughout the spring, they will begin to implement these changes. They aim to establish a South Carolina Grown roadside stand on the property, where the Thornwell residents will be able to sell homegrown vegetables and ornamental flowers. In addition, Dr. Lance Beecher is lending his aquaculture expertise to the team to begin growing catfish and tilapia on the property. The reestablishment of these operations will not only produce revenue for the Thornwell Home, but also help the children learn valuable agricultural, social, and business skills through hands-on experience.

— EMILY COOK



## Alumni Spotlight

### THE POLAR BEAR PROJECT

RESEARCH PROJECT: BEAR REPRODUCTIVE SYSTEMS

Dr. Erin Curry, a Clemson AVS graduate student alumni who studied reproduction of beef cattle and pigs as model species, now works at the Cincinnati Zoo & Botanical Garden. She is currently the Reproductive Physiologist at the Center for Conservation and Research of Endangered Species (CREW). There are four signature projects going on in CREW: rhinos, small endangered cats, plants, and, most recently, polar bears. Dr. Curry is leading the polar bear project, and her work was recently featured on the zoo's blog: <http://blog.cincinnati-zoo.org/2014/09/01/how-can-you-tell-if-a-polar-bear-is-pregnant/>! As very little is known about the bear reproductive processes in general, the goal of this project is to learn more about bear reproduction and increase their reproductive success. One of the objectives is to develop and utilize non-invasive methods of studying bears, such as fecal or urinary analysis, so that these techniques can be applied to wild populations. There are several different areas of study in the Polar Bear Project including: characterizing female cyclicity and pregnancy, characterizing male seasonality, monitoring sexual maturation, monitoring effects of contraceptives, and developing assisted reproductive technologies (ART). At the present, there is no non-invasive pregnancy test for any bear species and Dr. Curry states that "monitoring female reproduction and pregnancy has been the most challenging." One of Dr. Curry's primary goals is to develop a non-invasive pregnancy test for polar bears (which hopefully can also then be applied to other species as well). Without a definitive pregnancy test, it's mostly guesswork in determining where the reproductive process is failing. Unlike some other more amicable species, researchers are unable to easily perform routine ultrasound examinations or take blood samples from a 700 lb carnivore to detect ovulation or diagnose pregnancy. Fecal steroid analysis has been used and turned out to be a good indicator of ovarian activity and ovulation, but female polar bears experience a high rate of pseudo-pregnancy, in which their progesterone concentrations are indistinguishable from those of a pregnant female. Dr. Curry states that her next area of interest is "to determine whether there are specific proteins present in feces that might be useful as pregnancy biomarkers." Because polar bears don't produce a lot of cubs, they have also started evaluating various assisted reproductive technologies, such as semen cryopreservation, ovulation induction, and artificial insemination. In March of 2012 the Seneca Park Zoo, along with Dr. Curry, performed the world's first polar bear artificial insemination. The female did not produce cubs, but they were successful in inducing ovulation. One of Dr. Curry's 'side projects'

is studying red pandas. From a reproductive standpoint, they're very similar to polar bears in that they're seasonal breeders and they experience both delayed implantation and pseudo-pregnancies. Red pandas can be trained for ultrasound examination, so in addition to monitoring their behavior and fecal hormones, Dr. Curry is able to see what's going on in the uterus. With all of the research done by Dr. Curry and her team, we are hopefully one step closer to learning more about the reproductive systems of polar bears and other wildlife species!

—CASEY WHEELER



## LIVESTOCK & FORAGE PROGRAM TEAM

### EDUCATING TODAY'S PRODUCERS FOR TOMORROW'S MARKETS

The livestock and forage team strives to be a regional source for research based educational programming for livestock production agriculture and forage producers. The team consists of 13 agents and 4 specialists. Dr. Matthew Burns is the Livestock and Forage Program Team Leader with 100% Extension responsibilities. Dr. Burns also serves as the Director of the Clemson University Bull Testing Program and State Beef Specialist. His applied research/extension program focuses on beef cattle management, livestock and forage precision agriculture adoption (electronic hip

height collection project), and forage/livestock interactions (Management of KY 31 impacts). Mr. Brian Beer is the Assistant Program Team Leader and serves as an Area Livestock and Forage Agent. Mr. Beer is an expert in beef cattle marketing and serves the South East Cattle Advisor Extension Group. Agents and Specialists focusing on systems-based production research and programing are critical to the success of the team's Extension outreach.

Livestock and Forage Program Team efforts are focused on encouraging sound management practices to improve profit potential for producers in South Carolina. Livestock and Forage Team agents and specialists are heavily involved in livestock youth activities, in addition to adult education programs, individual farm assessments/planning, and statewide field days/demonstrations.

—MATTHEW BURNS  
*Clemson University Cooperative Extension  
animal scientist-beef specialist*



### FACULTY SPOTLIGHT Dr. Glenn Birrenkott

Over the last few decades, the Clemson AVS department has grown and evolved drastically, opening the doors to numerous new opportunities for students. However, since 1978, one essential element of the department has remained constant, and his name is Dr. Glenn Birrenkott. Born and raised in rural Wisconsin, Dr. Birrenkott developed a love for poultry at a young age. After showing chickens for several years, he earned his national judge's license by the time he was an undergraduate at the University of Wisconsin in Madison. Shortly thereafter, he began judging in shows throughout the Midwest. Dr. Birrenkott remained at UW Madison for the entirety of his academic career, earning a bachelor's and a master's degree in Poultry Science, as well as a PhD in Reproductive Physiology and Endocrinology, with a minor in Human Physiology from the university's medical school. He then left Wisconsin to find his new home here at Clemson University. Dr. Birrenkott teaches Animal Anatomy and Physiology each fall semester, as well as Animal Reproduction in the spring. This past fall, he began teaching the first Poultry Techniques class that the department has had in seven years, and in the spring, he will add Poultry LNA instructor to his resumé, as well. It is not uncommon to hear a lecture hall full of laughter at one of Dr. Birrenkott's stories, or to see him moving animatedly around the front of the room to demonstrate a concept. This type of teaching style lies at the heart of what Dr. Birrenkott believes to be the most unique aspect of the Clemson AVS experience, that is, that the faculty and staff take a sincere interest in helping students, engaging them through hands-on activities and directing them to a process of discovery. He is a firm believer in learning by doing; as he explains, "I can tell you something all day long, but until you've done it and seen it for yourself, it doesn't resonate." Besides his love of teaching, Dr. Birrenkott also possesses a passion for advising and takes great pride in guiding students along the road to success. He serves as the advisor for all AVS transfer students, and takes a special interest in helping them navigate through the challenging transition period to Clemson. Outside of his endless contributions to the success of the department, Dr. Birrenkott enjoys spending time at home with his wife, daughter, and three grandchildren.

—EMILY COOK

# The Changing Face of AVS

## NEW FACULTY HIRE

### Tiffany Wilmoth, reproductive physiologist

This semester, the AVS department welcomed Dr. Wilmoth to Clemson, where she dove right in whole-heartedly. Currently she is teaching the animal reproduction class and is undertaking animal physiology and anatomy in the spring semester. With this being her first faculty position, she is excited about the opportunity to bring in fresh new ideas and develop her classes. She has already begun to make her mark by incorporating new material and labs in her animal reproduction class. She is also working to put together a two semester Creative Inquiry Project on sow management and farrowing systems.



“Teaching students and seeing them get it and get excited is such a rewarding experience.”  
-Dr. Wilmoth

In addition to teaching, Dr. Wilmoth is involved in research. Her primary research

interests lie in fetal programming. She is interested in understanding how environmental factors affecting placental development and function will eventually effect muscle development and quality in pigs.

Her passion for research was discovered while working towards her bachelor’s degree in Animal Science at West Virginia University. Thus, when the opportunity to continue her education at WVU presented itself, she jumped at the chance. She went on to receive both her Masters and PhD in reproductive physiology.

Upon completion of her PhD she switched gears, pursuing a post-doc at University of Missouri in meat science.

Raised in West Virginia, Dr. Wilmoth enjoyed working with animals from a young age, and still enjoys it today. In her spare time, she works with

her three blue heelers. One of her dreams is to start a cattle dog rescue where she can house and retrain dogs like her blue heelers to herd, hopefully helping keep them out of shelters. “Sometimes dogs just need a new job and new set of rules; especially working dogs.” Wilmoth explains.

Dr. Wilmoth loves the camaraderie that comes with being a Tiger and is very excited to be a part of the Clemson family!

-ALLISON MILLICAN

## NEW STAFF HIRE

### Stephanie O'Brien, student services program coordinator

The newest member of the AVS staff is Ms. Stephanie O'Brien! She received her undergraduate degree from the University of Massachusetts at Amherst in Sociology, and her MS in Social Work from the University of Pennsylvania. She is the department’s new Student Service Coordinator, assisting with registration coordination, and many other things. She is excited to make sure that registration continues to run smoothly and eager to learn the various aspects of her position. She previously worked at



Clemson Extension with the Home and Garden Information Center. Stephanie moved to Clemson from Illinois four years ago with her husband, a professor at Clemson, and two children, as well as her dog and three cats. Her family loves the southern weather of 70 degrees in December, and spends as much time outside as possible. She enjoys biking and walking trails with her family. We are incredibly excited to have Stephanie joining our department and look forward to the new energy and support she brings!

-JENNIFER LANTZER

## WELCOME BACK!

### Dr. Thomas Scott

Dr. Thomas Scott has worked for Clemson for 28 years and we are excited to welcome him back to the AVS faculty after serving 5 years as Dean of CAFLS.



Dr. Scott claims that serving as Dean has allowed him to see life through a different set of eyes. The change has given him new energy. This is actually Dr. Scott’s second time coming back to the faculty from an administrative position, and each time he embraced the opportunity to reinvent himself. The first time he evolved from working in traditional

research to the molecular world, expanding his research interests from poultry to breast cancer, securing two patents. He loved being able to work with great people and apply his research to finding solutions for everyday problems using molecular biology.

After only a few months, Dr. Scott is back in the swing of things again. He is currently teaching a leadership course and will teach animal health in the spring. One of the projects he is most excited about is a Creative Inquiry Project he and Dr. Heather Dunn have initiated. The project will be working with the Thornwell Home for Children in Clinton, South Carolina. Their goal is to help bring Thornwell’s 300-acre farm back into production. Dr. Scott is excited to work with students on this CI team that share his passion for wanting to better the lives of others through agriculture.

“I’m more interested in the “we” than the “me” and I want to create success for other people,” claims Dr. Scott. Read more about this project in our CI section!

In addition to his teaching, Dr. Scott is still active in research and serves as a mentor to graduate students. Since his return to faculty, they have already put together four manuscripts. He

also wants to begin working on the development of a one-year national leadership program available to college students from around the country that would be administered through Clemson.

He is also enjoying the opportunity to explore his creative side and has started writing a blog, “Who Moved My Blue Cheese.” The blog’s name is a twist on Spencer Johnson’s book about change, inspired by Clemson’s claim to fame, blue cheese. Dr. Scott is catalyzing its start by writing an entry every two-weeks, but hopes for it to become a guest blog. Dr. Scott describes “Who Moved My Blue Cheese,” as having a light hearted and positive vibe. Each entry has a one-word title and two to three Clemson relevant definitions in no more than 600 words explaining the word and the need to deal with change. Eventually he hopes for this blog to become a Clemson Dictionary. This blog is allowing him to employ a creative writing outlet and expand his writing skills.

Dr. Scott has already contributed many positive things to our department, and we are elated to welcome him back!

- ALLISON MILLICAN

# Grads on the Go

## THE FEW. THE PROUD. THE GRAD STUDENT ASSOCIATION

The Animal and Veterinary Graduate Student Association (AVSGSA) includes all of the Masters and Ph.D. students in our AVS department. As an organization, we facilitate good relationships with CAFLS and Clemson University by serving on committees that ensure clear and open communication on multiple topics that affect graduate student life at Clemson. The AVSGSA also keeps graduate students aware of seminars, training, and social events organized by Clemson University to aid in career development and stress relief. Most recently, the AVSGSA organized a canned food drive, which took place in October and November of 2014, collecting 685lbs of cans for Clemson Community Care, a non-profit charitable corporation. We would like to extend a huge thank you to all the students, professors, staff, and friends of AVS who made this extraordinary donation possible! We have had an excellent semester, with new research projects underway and we look forward to bringing those updates to you next semester!

- KAREN TAYLOR

## MEET OUR NEW GRAD STUDENTS!

### 1. Kati Strawderman

Degree Program: Non-Thesis M.S.  
Major Advisor: Susan Duckett  
Undergraduate Institution: Francis Marion University  
Hometown: Clio, SC

*"I like Clemson because it has so many opportunities for individuals to explore. The Agriculture and Animal Science programs leave nothing to be desired."*

### 2. Brandon Koch

Degree Program: Ph.D.  
Major Advisor: Susan Duckett  
Undergraduate Institution: University of Nebraska at Lincoln  
Masters Institution: West Texas A&M University  
Hometown: Lincoln, NE  
Research Focus: Effects of grain exposure timing on fat deposition in beef steers.

*"I Like Clemson because of the high quality of scientific research"*

### 3. Louisa Bowen

Degree Program: Ph.D.  
Major Advisor: Gustavo Lascano  
Undergraduate Institution: West Virginia University  
Masters Institution: West Texas A&M University  
Hometown: Morgantown, WV  
Research Focus: Rumen microbiome and development in dairy cattle

*"Clemson is a strong research institution that provides many opportunities for graduate students. It's also a beautiful place to live!"*

### 4. Prabha Ranasinghe

Degree Program: Ph.D.  
Major Advisor: Gustavo Lascano  
Undergraduate Institution: University of Kelaniya, Sri Lanka  
Masters Institution: University of Illinois at Chicago  
Hometown: Kurunegala, Sri Lanka  
Research Focus: Nutrient utilization to improve feed efficacy, reduce metabolic costs of energy, maximize microbial synthesis, introduce exogenous enzymes to increase nutrient utilization and increase milk production.

*"Clemson University has a very strong AVS graduate program with extremely distinguished faculty which blends high quality course work and research in well-equipped facilities. Additionally, very friendly southern culture made me interested in Clemson University."*

### 5. Ralph Ricks

Degree Program: M.S.  
Major Advisor: Nathan Long  
Undergraduate Institution: Auburn University  
Hometown: Andalusia, Alabama  
Research Focus: Effects on Passive Immune transfer from dam to offspring and subsequent calf performance after late gestation rumen bypass fat supplementation in 1st and 2nd calf beef brood cows.

*"I like Clemson because of the high class education and a small school feel."*



### 6. Scott Sell

Degree Program: M.S.  
Major Advisor: Scott L. Pratt  
Undergraduate Institution: University of Georgia  
Hometown: Sylvania, Ga  
Research Focus: Central Bull Test Stations

*"As a full time employee at the Edisto REC and student I love the close knit family feeling."*

## Meet the Post Doc!

Farzana Ferdous attended the University of Guelph, where she earned her bachelor's degree in Molecular Biology and Genetics in 2003. As a part of her undergraduate research, she concentrated on identification of certain Mastitis-Associated Bovine Leukocyte Antigen and evaluation of peptide binding affinity to those allelic products. She moved to Clemson in 2004 and in 2005, she started a master's program in AVS under Professor Tom Scott studying immune response of avian thrombocytes. She continued her work in characterizing avian thrombocytes as immune cells in the doctoral program in Biological Sciences in the same lab. Currently, she is back in AVS as a postdoctoral fellow under Dr. Scott. She is working on a collaborative project with Clemson University Genomics and Computational Biology Laboratory and the local poultry industry in order to perform a genome-wide search to investigate genes that are associated with several poultry diseases. Farzana is originally from Bangladesh. She likes to read books, cook, and travel. Her husband, Taufiqur Khan is a professor in Mathematical Sciences at Clemson. She is also a mother of two beautiful children, Irfan and Zaynah that keep her busy when she is not doing research.



## AVS News & Awards

### Baby Burns

On September 8th, 2014 at 8:21 am, Ashley and Matt Burns welcomed Eleanor Grace into the world. She was born at 20 ¾ inches long and 11 pounds, 3 ounces. Everyone is doing great and AVS is thrilled for the whole Burns family!



### AVS Awards

American Association of Bovine Practitioners (AABP)

Patty Sharko was given a plaque and recognition at AABP 2014 Conference in Albuquerque for completing her service as AABP Parliamentarian.

Tom Scott received the 2014 South Carolina Advocate for Agriculture presented by the SC Advocates for Agriculture ([http://scadvocates4ag.org/past\\_adv\\_of\\_year.htm](http://scadvocates4ag.org/past_adv_of_year.htm)). This award was also presented to Sen. Harvey Peeler, a dairy science graduate who is the second longest serving member of the South Carolina Senate.

Tom Jenkins received the 2014 American Dairy Science Fellows Award as well as the 2014 Forest Hills High School Distinguished Alumni Award

**RUNNING FOR A CURE!**

**Dr. Heather Dunn is running the 2015 Boston Marathon in honor of Cory Watt, AVS Grad!**  
**Please join them to get to the ultimate finish line: a world without cancer!**  
<http://www.runDFMC.org/2015/heatherd>

## AVS Research Highlights

AVS has been busy this year presenting research and publishing papers to disseminate important research findings! See something that looks interesting? Let us know! More information is available on the AVS website at [clemson.edu/avs](http://clemson.edu/avs).

### Scientific Publications

**Duckett, S.K.** 2014. Changes in dietary regime impact fatty acid profile of beef. Proc. Beef Improvement Federation Proceedings.

**Duckett, S.K., C. Fernandez Rosso, M.C. Miller, R.M. Lewis, and J.P. Fontenot.** 2014. Effect of frame size and time-on-pasture on meat composition and palatability in a forage-finishing system. J. Anim. Sci. 92:4767-74.

**Duckett, S.K., J.G. Andrae, and S.L. Pratt.** 2014. Exposure to ergot alkaloids during gestation reduces fetal growth in sheep. Frontiers in Chemistry 2:68.

**Duckett, S.K., M.C. Miller, G. Volpi Lagreca, M. Alende, J.G. Andrae, and N.M. Long.** 2014. Effect of palmitoleic acid infusion on plasma, muscle and adipose tissue fatty acids and lipogenic gene expression in obese sheep. Diab. Metab. Synd. and Obesity (In press).

Ferdous, F. and **T. Scott.** 2015. A comparative examination of thrombocyte/platelet immunity. Immunol. Lett. 163: 32-39.

Ferdous, F. and **T. Scott.** 2014. Bacterial and viral induction of chicken thrombocyte inflammatory responses. Dev. Comp. Immunol. In press.

**Jenkins, T.C.** and K.J. Harvatine. 2014. Lipids feeding and milk fat depression. Vet. Clin. Food Anim., pp 623-542, Elsevier Publishing (Book Chapter).

Kadegowda, A. K. G., A. Wright, and **S. K. Duckett.** 2014. Nutritional milieu of isolated stromal vascular cells determines the proliferative, adipogenic and lipogenic capacity in vitro. Adipocytes 3:4, 1-10.

**Lascano, G.J.,** Heinrichs A.J., Gary R.R., Topper P.A., Brandt R.C., Adviento-Borbe A., and E.F. Wheeler. 2014. Effects of forage-to-concentrate ratio and dietary fiber manipulation on gas emissions and olfactometry of Holstein heifers. J. Dairy Sci. (In Press).

**Lascano, G.J.,** Tricarico, J.M., and A.J. Heinrichs. 2014. Saccharomyces cerevisiae live culture affects rapidly fermentable carbohydrates fermentation profile in precision-fed dairy heifers. Can. J. Anim. Sci. (In Press)

Loften, J. R., J. G. Linn, J. K. Drackley, **T. C. Jenkins,** C. G. Soderholm, and A. F. Kertz. 2014. Invited review: Palmitic and stearic acid metabolism in lactating dairy cows J. Dairy Sci 97:4661-4674 (Invited Review).

**Long, N. M., T. A. Burns, G. Volpi Lagreca, M. Alende and S. K. Duckett.** 2014. Palmi-toleic acid infusion acutely affects glucose and insulin regulation in finished lambs. J. Metab. Syndrome 3:148 .

**Pratt, S.L.,** H.M. Stowe, B.K. Whitlock, L. Strickland, M. Miller, **S.M. Calcaterra, M.D. Owens,** G.E. Aiken, F.N. Schrick, **N.M. Long, S.K. Duckett, and J.G. Andrae.** 2014. Bulls grazing E+ tall fescue exhibit impaired growth, semen quality and decreased semen freezing potential. Theriogenology xxx: 1-7.

### Presentations

**Duckett, S.K.** 2014. UNESP in Jaboticabal, Brazil and USP in Pirassunga, Brazil

**Jenkins, T.C.** 2014, American Association of Bovine Practitioners, Sept 16-18, Albuquerque, NM

**Jenkins, T.C.** 2014, ADSA Discover Conference on starch utilization in ruminants, Oct 6-9, Chicago, IL

**Jenkins, T.C.** 2014, Nutrition Conference, May 5-9, Santiago, Chile & Rosario, Argentina

**Jenkins, T.C.** 2014, Cornell Advanced Dairy Nutrition Conference, June 2-5, Ithaca, NY

**Volpi Lagreca, G., M. Alende, J.G. Andrae, and S.K. Duckett.** 2014. International Meat Science and Technology Congress in Punta del Este, Uruguay



## What's Going On!

### 2015 Calendar of Upcoming AVS-Related Events

#### JANUARY

● Jan 31 - Feb 3

American Society of Animal Science 2015  
Southern Section Meeting, Atlanta, GA

#### FEBRUARY

● Feb 21 - 22

SC 4-H horse bowl and hippology contests

● Feb 21 - 22

Clemson University spring IHSA classic horse  
show. Two hunt seat, 1 western and western  
regional (post-season) show.

● Feb 26 - 28

Southern American Dairy Science Association  
Conference 2015, Lexington, KY

#### MARCH

● March 6, 20

Destination Clemson

● March 28 - April 1

Experimental Biology 2015

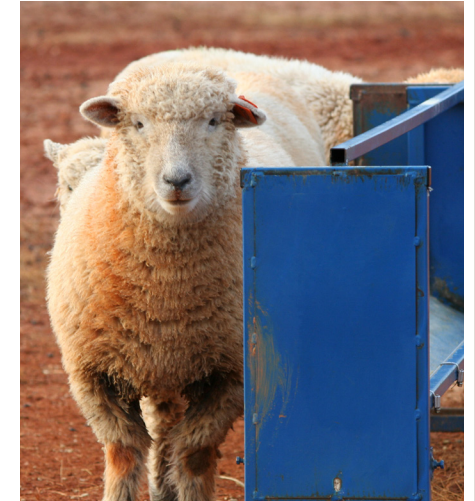
#### APRIL

● Stay tuned for LNA dates!

● April 3, 10 & 17

Destination Clemson

- EQUINE EVENTS
- DAIRY EVENTS
- CLEMSON AVS DEPARTMENT EVENTS
- GENERAL EVENTS





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## RECONNECT!

Interested in reconnecting with the AVS department? Contact us, and we can talk about what form that might take. Perhaps you're interested in being a guest speaker for one of our classes, acting as a sponsor for a WAVS member or moving a pet project forward. If you saw something here that piqued your interest, let us know! Former club members, students and faculty — we would love to hear about what you're up to and where you are!

Be sure to visit the department website for more information, to join our mailing list (mailing or email addresses) and to suggest stories for future newsletters.

Find us at: [clemson.edu/cafls/departments/animal\\_vet\\_science/](http://clemson.edu/cafls/departments/animal_vet_science/)

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