Welcome Francine and Darren Henry!

The Department of Animal and Dairy Science is very pleased to welcome Francine Henry, and her husband, Darren Henry to our Tifton Campus. They come to UGA from Texas Tech University. Francine will have an 80% Extension, 20% research appointment, and part of her duties will include working with the Irwinville bull test and HERD programs. She brings a tremendous amount of enthusiasm and knowledge, and she will add greatly to our Extension efforts in support of beef producers. Darren Henry will have an 80% research, 20% Extension appointment, and will focus on nutrition and production systems research, with a goal of improving the efficiency of beef production and investigating the environmental impacts of beef production as a way to develop strategies to improve forage utilization and efficiency in the feedlot.

Francine Henry is originally from the State of São Paulo in Brazil and although agriculture and livestock production were never part of her childhood, she knew at a young age that she had a passion for animals. After graduating from high school, Francine found her interest in livestock, especially beef cattle, leading her to pursue a degree in Animal Science. As part of her bachelor’s degree requirements, Francine had to complete a supervised internship in any area related to Animal Science and to fulfill this requirement she traveled to the United States.

In March of 2011, she started an internship at the University of Florida, North Florida Research and Education Center in Marianna, FL. In August of 2011, Francine returned to Brazil and received a B.S. degree in Animal Science from São Paulo State University in Dracena, São Paulo.

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In May of 2012, Francine returned to Florida as a short-term scholar, where she was able to conduct experiments related to beef cattle nutrition with more in-depth and independent involvement in Research and Extension. This was the time when Francine decided she wanted to pursue an academic career as a beef cattle nutritionist. From 2012 to 2018, Francine worked towards her M.S. and Ph.D. degrees at the University of Florida. After completing her Ph.D., she moved to Lubbock, TX and performed a two-year postdoctoral program at Texas Tech University where she worked with grazing and feedlot production systems. Now at UGA, Francine Henry’s applied research will focus on supplementation strategies and technologies to improve forage digestibility in beef cattle production. As a beef cattle producer herself, it is her ultimate goal to build a relevant and strong beef extension program that stakeholders in the State of Georgia can rely on as their first point of contact for dependable, meaningful information and solutions. Francine Henry is married to Darren Henry, and they have a beautiful two-year-old daughter, Marianna Henry.

Dr. Darren Henry was born and raised in southeast Texas and his family owns and operates a small cow-calf operation in Montalba, TX. After graduating high school, Darren completed a BS in Agricultural Leadership and Development and Animal Science at Texas A&M University. While in College Station, Darren had the opportunity to complete a semester in the Animal Science department at the University of Sao Paulo in Brazil. Upon returning to the U.S., Darren graduated from Texas A&M and moved east to earn a M.S. and Ph.D. at the University of Florida – North Florida Research and Education Center (NFREC) in Marianna, FL. After completing the requirements of a Ph.D., Darren accepted an assistant professor position at Texas Tech University in Lubbock, TX. During his time at Texas Tech, Darren worked to improve the efficiency of stocker and feedlot production by utilizing strategies to reduce enteric CH4 production.

Now in Tifton, Darren is working to provide producers with information that can help improve efficiency, while reducing the environmental impact of beef cattle production in terms of water conservation and greenhouse gas production. His work will be systems based focusing on production from the cow-calf system all the way to harvesting. Having conducted their graduate research at Marianna, Florida, they are very familiar with the environment in south Georgia, and their strong backgrounds in beef cattle production will allow them to provide meaningful information for the beef industry. We are excited that their addition to the Tifton campus will provide complementary knowledge and skills to Jennifer Tucker’s research and Extension efforts and allow us to have a critical mass of dedicated Extension and research personnel to support the beef industry.

Welcome Francine and Darren Henry!
From the Department Head

As we are coming upon the holidays, with Thanksgiving coming soon, I thought I would write what I’m thankful for in Georgia and here at UGA. I’m thankful, mostly, for the people I’ve met. The support from producers has been tremendous, and it’s obvious that alumni have great expectations and take great pride in UGA. I’m thankful that I get to work with tremendously dedicated faculty, staff, and students who work on important issues to society, regardless of whether the research is on growing and grazing alfalfa in Georgia, reducing transportation stress in pigs and cattle, finding the links between the gut microbiome and animal growth and marbling, finding ways to reduce methane production in grazing and feedlot cattle, developing programs that get youth excited about animal agriculture, coming up with methods to reduce mastitis, identifying cost-effective supplementation programs for grazing cattle, studying heat stress in dairy and beef cattle, developing genetic tools that are used worldwide, studying how Covid impacts taste buds, identifying new stem cell therapies through the use of mesenchymal stem cells, developing exosome treatments for stroke recovery and traumatic brain injury recovery, or working with thousands of youth involved in livestock programs, or the meats judging team practicing at 6 a.m., prior to the beginning of the workday, or our faculty involved in bull and heifer development programs that support producers. The faculty, staff, and students in the Department of Animal and Dairy Science are working in our laboratories, and on our eight departmental farms, to implement the statement of purpose we developed in 2020: ‘We leverage our expertise in revolutionary research, experiential instruction, and client-focused extension and outreach to provide a skilled workforce; cultivate sustainable animal production systems; and promote animal and human health for the betterment of society.’ I’m thankful that I get to work with dedicated people who take care of our animals 365 days a year, just as every other producer does. I’m thankful for the support I see, daily, from producers, alumni, and the parents and youth involved in livestock, equine, and meats programs. I wish all of you a Happy Thanksgiving!

Sincerely,

Francis Fluharty
Animal and Dairy Science
Department Head
The American Society of Animal Science has been sharing great research and supporting science careers for over 100 years. The Journal of Animal Science recently released a list of high-impact research from 2020 and a paper from the UGA Animal Breeding and Genetics group is among the research included in the list. The paper entitled “Changes in genetic parameters for fitness and growth traits in pigs under genomic selection” was published during the Ph.D. studies of Jorge Hidalgo, under the supervision of Dr. Ignacy Misztal.

The research had a lot of guidance and brilliant ideas from Daniela Lourenco, Shogo Tsuruta and Yutaka Masuda as well. This study showed that intensive genetic selection has an undesirable impact reducing genetic variation and emphasizing undesirable genetic correlations between production and fertility traits. Because of the changes induced by genetic selection, the remaining genetic variation upon which future selection must act to generate genetic progress will face a more undesirable genetic correlation. It is important to consider these changes in the breeding programs, and genetic parameters need to be updated regularly to design sustainable breeding programs.
His interest in fish began in a small town in Illinois with relatives who valued fishing and his desire to study ways to produce food for people from fish culture. Gary Burtle's goals are for service to farmers and rural citizens in everything aquatic. So, he maintains his expertise in water chemistry, aquatic animal health, fish nutrition, and aquatic ecology.

Burtle is an extension aquaculture specialist and conducts applied research related to warm water aquaculture at the University of Georgia Tifton location, since 1987. Projects involve freshwater fish and crustaceans used in aquaculture. He has Extension programming responsibilities for aquaculture management, aquaculture development, fish disease diagnostics, sportfish pond management, and aquatic weed control. Recently his work has involved toxic algae issues in Georgia livestock watering ponds and recreational ponds and lakes. He teaches junior-senior level courses in aquaculture and animal science issues at UGA-Tifton.

Burtle obtained his doctorate in Aquaculture Nutrition at Auburn University and bachelors in biology from the University of Illinois. He has also worked for the University of Arkansas in aquaculture Extension and research in the early 1980s working with catfish and baitfish. Burtle's non-academic experience includes work in the catfish industry as a processing plant manager, fish farm manager, chemist, and consultant in the states of Alabama, Florida, and Mississippi.

While in Georgia, Burtle has worked with fish diseases to find the cause and management for Proliferative Gill Disease in catfish. He has worked with fish feeds in refining methionine requirements, including carnitine for better fish growth and health, and proposing lower-cost feed formulations for freshwater fish. Recent work with rice-fish culture systems in Nigeria discovered a floating fish feed formulation that can be produced on the farm from agricultural byproducts.

Gary Burtle and his wife Melissa live in Tifton and have three sons, Will, Thomas, and John. Burtle has been active as a leader in Boy Scouts, Lions International, and Knights of Columbus.
Alex Stelzleni is originally from Jefferson City, Missouri but also spent a large part of his childhood in Granite City, IL just outside of St. Louis where his grandparents owned a butcher shop and grocery store. Some of his earliest memories are from in the butcher shop and have stuck with him throughout his career as a meat scientist. He also spent time working as a meat clerk with a national chain through high school. Around the same time, Stelzleni started working on a family friend’s farm which sparked his interest in beef cattle production. After high school, he headed to (Southwest) Missouri State University and continued his education in earning a BS in Agriculture with an emphasis in Animal Science under the guidance of Dr. Tommy Perkins (now at West Texas A&M).

While in college Stelzleni started to work with and learn more about the use of ultrasound to measure economically important traits impacting carcass characteristics for inclusion as genetic decision tools and decided to pursue his master’s degree at the University of Arkansas. At the University of Arkansas, he worked under the direction of Dr. A. Hayden Brown, Jr. in animal science with an emphasis in Quantitative Breeding and Genetics. Stelzleni’s research centered on calculating the estimated breeding values, heritability, and correlations for the ultrasonically measured traits of ribeye area, 12th rib fat thickness, and intramuscular fat in yearling Brangus bulls and estimating the influence other production traits had on intramuscular fat. While in Arkansas he also worked for Tyson Foods in FSQA for two years. After graduating with his M.S. degree Stelzleni accepted a position with the University of Florida department of animal sciences as program coordinator for adult extension.

Working for UF extension Stelzleni’s primary responsibilities included working with beef producers on IRM (Integrated Resource Management), SPA (Standard Performance Analysis) programing, working with fairs and livestock shows to collect ultrasound data for carcass contests, and working with state specialists on various workshops, short-courses, and research projects. During this time Alex always planned to continue his education in meat science, but the opportunity arose for him to pursue his Ph.D. on a full-time basis under the direction of Dr. D. Dwain continued on next page.
Johnson at UF. Returning to school full-time as a graduate assistant Stelzleni continued to work with fairs and livestock shows collecting ultrasound data and assumed the role of HACCP Coordinator for the UF Meat Processing Center.

Throughout his Ph.D., Alex’s research centered on the realimentation of cull cows to improve their quality, value, and end utility combining beef production with meat science. After completing his Ph.D. Alex stayed on with UF animal sciences for a year teaching and working with meat extension.

Alexander Stelzleni joined the University of Georgia Department of Animal and Dairy Science as an assistant professor of Meat Science in 2007 and is currently a professor and graduate coordinator for the department. His primary responsibilities include teaching undergraduate and graduate courses in meat science, working with graduate students, and conducting applied research. Stelzleni’s current research efforts include a focus on finishing beef cattle in the southeastern United States and subtropical environments. This research focuses on the utilization of regionally available co-products, the impact of long-term heat stress and heat stress mitigation on finishing performance, animal well-being, and meat quality, and the use of summer annuals in forage-finished beef programs. His laboratory also focuses on antimicrobials and further processing, including meat enhancement solutions, determining the quality and safety of non-intact beef products, validating small ruminant slaughter and processing, determining the quality and safety of semi-dry and dry meat products containing beef, and further processing to increase the utility of broiler meat afflicted with the wooden breast myopathy.

Alexander Stelzleni working with meat science graduate students (R-L) Savannah Brannen, Sarah Anne DeVane, Hanna Alcocer, and Morgan Gravely on a pork fabrication project
Lawton Stewart is a native of Georgia, growing up in Tifton. He grew up through Georgia 4-H and was involved in judging teams and the livestock program. Stewart and his family raised and exhibited club lambs through the Junior Livestock Program. These experiences led him to pursue a degree in Animal Science at the University of Georgia. From that point he furthered his education, earning an M.S. in Agronomy, emphasizing Forage Management, at the University of Florida. Stewart felt this would allow him to investigate a large resource for the livestock industry. Subsequently, he continued his graduate studies earning a Ph.D. at Virginia Tech in Animal Science, with an emphasis in Ruminant Nutrition and Forage Utilization. After completing his Ph.D., Lawton spent a year in Kentucky as a Post-Doctoral Research Fellow with the University of Kentucky and Alltech, Inc. investigating nitrogen metabolism in ruminants. Lawton joined the Animal and Dairy Sciences Department at the University in June of 2008 as an Extension Livestock Specialist.

At UGA, Stewart is responsible for the statewide extension and applied research in beef cattle nutrition and management. He has built a synergistic education and research program that has leveraged knowledge, collaboration, communication, and technology to improve the livelihood of Georgia’s beef cattle producers. His goal is to assist producers to improve production and efficiency in their herd, but also to evaluate other opportunities in beef cattle production such as preconditioning/backgrounding, stockering, and retained ownership.

During his career, Stewart has worked closely with the County Extension Agents throughout the state. He enjoys the opportunities to work with agents and producers in one-on-one situations to problem solve and help improve production efficiencies. Building these personal relationships is one of the highlights of the job. Additionally, he has worked with agents to build new programs such as the Northeast Georgia Beef Cattle Short Course and Southern Women in Agriculture (SWAG). Both programs are the results of agents and specialists working together to identify the needs of the industry and developing educational opportunities to address them.

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Lawton Stewart’s research program focuses on evaluating management and nutritional strategies to improve the efficiency of cattle production and improve the profitability of beef producers in the Southeast. He collaborates with scientists across the campus and at other institutions to address production issues he sees throughout the state. Another focus of Stewart’s research program is the training of future scientists for the applied agricultural industry through graduate training, undergraduate research, and Extension agent collaboration. A few of these students are highlighted below.

Stewart works closely with the Junior Livestock Program, regularly guest lectures for undergraduate and graduate classes, and serves as the Extension Coordinator for the department. He has enjoyed his 13+ year career at Georgia serving the cattle industry and looks forward to continuing his Extension and research programs to tackle current issues. If you have any questions regarding his program, feel free to reach out to him by email (lawtons@uga.edu) or phone 706-542-1852.
The main professional mission in life for Dr. Julia McCann has been unwavering: to educate, inspire, and facilitate budding professionals and participants in all layers of the horse industry. She has had the fortunate opportunities to work from several platforms over a 32-year career in academia that started at UGA Department of Animal and Dairy Science in 1986 with equine teaching and research responsibilities. Many UGA students became lifelong friends and have impacted not just the horse and agriculture industries but in fields well beyond the normal vision of an animal science degree program.

After 16 years on the UGA faculty, the mountains called, and she returned to the hills of Blacksburg to continue her mission from VA Tech. Initially, McCann served the VA 4-H horse program for a few years before engaging in a full-time teaching mission in the equine area of the Animal and Poultry Science Department. Once again, her responsibilities included coaching the VT horse judging team that she helped start during her graduate student years and ultimately earned several national contests wins for the Hokies judging teams.

Back in the land of the Dawgs in 2016, McCann’s most recent role has been to lend support to the educational aspect of the GA 4-H horse program. Working directly with the educational contests and horse show, the greatest pleasure has come from working with the outstanding youth, adults, volunteers, and agents associated with the horse 4-H horse program and industry.

Especially gratifying has been working with youth aiming for success at national competitions. The horse judging quiz bowl teams gained national recognition such as the Madison County team that was Reserve National Champions at Denver and the Douglas County team that was fourth one year. Chelsea Pusbach of Banks county was the first Georgia 4-Her to compete in presentation (2017) and public speaking (2018) contests in Denver and claimed the national win in both contests. But these championships do not overshadow the many friendships and service to others observed among many in the GA 4-H horse program.
The past 18 months have presented challenges for the in-person activities and experiences that characterize the horse program, but progress is still being made for Georgia youth to achieve Masters status in the GA 4-H horse program.

Outside of the UGA responsibilities, Julia McCann keeps her two horses fit and working regularly but she also has embarked into the show dog world by breeding and raising Dalmatians. McCann has had a lifetime of Dalmatians since her dad got her first one at six weeks old because they are a natural companion around the horse barn. She and her husband Mark retained two puppies from the last litter, Flipper and Poppy to train, compete, and love on! McCann showed Poppy to win their first AKC Conformation Championship this year in Perry and Flipper has a major title and points toward his FCAT speed event at nearly 28 miles per hour! Showing dogs has been a fun adventure to help scratch the horse show bug for now.
Jenna Williamson has been selected as a National Mastitis Council Scholar. The National Mastitis Council (NMC), a global organization for mastitis control and milk quality, supports the development of future udder health, milking management and milk quality specialists. For the 15th consecutive year, NMC is providing up to four travel scholarships to full-time graduate students for attendance at the NMC Annual Meeting. Only four graduate students receive this award. At least two NMC Scholars will be students enrolled as graduate students in a university or college outside of the United States and Canada.

Williamson is required to submit a paper for the NMC Technology Transfer Session and present a poster at the 2022 NMC Annual Meeting in San Diego, California (Feb 1-3). She will also submit a summary of her experience at the meeting which will appear in the NMC Newsletter Udder Topics. The NMC Annual Meeting typically has close to 400 attendees, so it is a great opportunity for Jenna Williamson to network in this relatively small field of dairy science!

What is NMC?

The National Mastitis Council is a not-for-profit professional organization devoted to reducing mastitis and enhancing milk quality. The NMC promotes research and provides information to the dairy industry on udder health, milking management, milk quality, and milk safety. Founded in 1961, NMC now has about 1,100 members in more than 40 countries throughout the world. The NMC is headquartered in Minnesota.

What does NMC do?

- Provides a forum for the international exchange of information relating to mastitis control and milk quality
- Develops and publishes educational materials including books, brochures and audio visuals on udder health, milking management and milk quality
- Establishes guidelines for mastitis control methods
- Develops protocols for determining effectiveness of mastitis control products
- Monitors changes in technology relating to udder health and milk quality
- Holds meetings and provides continuing education opportunities.
Bailey Rayfield grew up in rural South Georgia, and throughout her childhood, she was actively involved in both 4-H and FFA. For 12 years, she participated in the Georgia Junior Livestock program exhibiting cattle, sheep, and swine. Rayfield was immersed in agriculture at a young age on the family farm raising sheep; that is where her parents first instilled a love and respect for the agriculture industry. Today, her family is still just as deeply rooted in agriculture, managing a small herd of cattle. Outside school activities, she grows her own fresh-cut flower business in Adel, GA with her parent’s support.

After graduating from high school, she attended Oklahoma State University before transferring to UGA Tifton where she is currently a junior majoring in Agriscience and Environmental Systems. Rayfield is enrolled in the Warmwater Aquaculture class for animal science credits at Tifton.

Upon graduation, she plans to obtain a master’s degree in Crop in Soil Sciences at UGA Tifton. More specifically, Rayfield is interested in cotton and peanuts, and the precision agriculture being utilized with these crops.

After graduating with her master’s degree, Bailey Rayfield plans to pursue a career with an agricultural chemical/ fertilizer company as well as continue to grow her fresh-cut flower operation. She wants to work in and be an advocate for the agriculture industry that built her into the person that she is today.
Savannah Brannen is a second-year master’s student in Alexander Stelzleni’s lab. She graduated from the University of Georgia in May of 2020 with a bachelor’s degree in Animal Science and decided to continue her studies focusing on meat science.

Brannen grew up in Sylvania, Georgia on a small cattle farm, where she raised and showed beef cattle. During high school, she joined the FFA meats judging team and became interested in the processing side of the industry. In undergraduate school, Brannen worked closely with Dean Pringle and Alexander Stelzleni to gain more knowledge of meat science, and eventually found her niche in the microbiological side of the meats industry.

During her senior year of undergrad at UGA, Brannen completed a research project on the validation of surrogate E. coli through drying methods on a South African jerky-styled product, called Biltong. Brannen’s focus on her master’s degree is to continue this project, with hopes of validating drying as a method to reduce microbial populations on meat products.

In her free time, Savannah Brannen enjoys working on her cattle farm with her family back home, hiking with her dog, and painting. Upon graduation, she intends to find a career that will utilize her background in microbiology and meat sciences. She also hopes to continue growing her small beef cattle herd.
Shane Hernandez is a second-year Ph.D. student from Augusta, Georgia. Shane earned his Associate’s in Agriculture and B.S. in Biology at the University of North Georgia. Afterward, he earned his M.S. in Animal Science at the University of Georgia under beef cattle nutrition and management specialist, Dr. Lawton Stewart.

This past year, Shane was accepted into the UGA College of Veterinary Medicine’s dual Ph.D./DVM program in which he will be completing his Ph.D. with Dr. Stewart and then will proceed on to vet school. Shane is passionate about improving animal health through nutrition and management along with increasing the sustainability and profitability of beef cattle in the Southeastern United States.

During his master’s studies, Shane researched new deworming strategies to mitigate the effects of anthelmintic resistance. Additionally, his masters’ research measured the effects of plant-based antibiotic alternatives on animal growth and the rumen microecology.

Currently, Shane continues to investigate plant-based antibiotic alternatives. Additional research includes improving vaccine efficacy and measuring the impact of heat stress on rumen and fecal microecology. He hopes that his research will provide practical benefits to beef producers and the animals they care for.
Student Spotlight

Sarah Anne DeVane

Sarah Anne DeVane is a first-year master's student under the direction of Alexander Stelzleni. She was raised in Madison, Georgia around livestock and showing horses. Knowing she wanted to work with large animals and potentially pursue vet school DeVane pursued a bachelor's degree in Animal Science from UGA.

During her undergraduate career, she developed an interest in meat science through coursework and undergraduate research. DeVane joined the Stelzleni lab in the spring of 2020 as an undergraduate research assistant. In the fall of 2020, she received a BS in Animal Science before starting the master's program.

Her focus during her time in the master's program is working on a sous vide standardization project. The project focuses on standardizing the sous vide cook time of beef longissimus steaks (striploin) with regards to sensory and tenderness characteristics in comparison to clamshell grilling. DeVane has also been assisting with various projects throughout the lab group.

In her free time, Sarah Anne DeVane enjoys baking, riding horses, and going on walks with friends. After graduation, she intends to pursue a career in the meat science field.
Chelsea Pusbach received her BSA in Animal Science and is a first-year student of UGA’s College of Veterinary Medicine focusing on large animal medicine. Pusbach herself credits the acceptance and success in the veterinary program to her time in 4-H, ADS, and to the professors and extension agents, she had worked with. Pusbach was very active in the Banks County 4-H program. She had earned masters’ status in Horse, Egg Production, and Safety projects and ultimately the Dean’s Award in Agriculture and Environmental Sciences. A special highlight was to represent Georgia and win the horse demonstration and public speaking contests at the Western National Horse 4-H Roundup on the national stage.

The small feel of ADS allowed her to develop strong mentoring relationships with professors. It was through these relationships and that she realized her desire to build a career in the food animal industry.

The College of Agricultural and Environmental Science and the department merged Pusbach’s interest in veterinary medicine with her passion for food animal production via the Food Animal Veterinary Incentive Program (FAVIP). This program helped Pusbach focus on food animal production with the guaranteed admission to the vet school.

She looks forward to future opportunities to make a positive impact on the food animal industry and offer dedicated veterinary care to the producers who work hard every day to provide a healthy product on our plates.

Chelsea Pusbach