

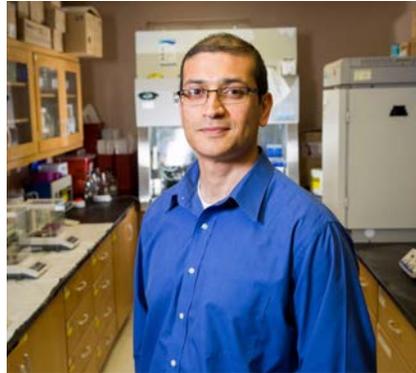
### Faculty member's 'holistic curiosity' fuels interest in healing brain injuries

**Lohitash Karumbaiah ended his summer by making history**, as a member of the first research team to ever simulate recovery from a traumatic brain injury in a petri dish.

For Karumbaiah, the breakthrough to help heal brain injuries was the result of years of working to understand nervous system injuries.

With his diverse influences from having worked in industry and academia, Karumbaiah approaches research with a holistic curiosity that has allowed him to bridge many disciplines and learn from a diverse set of mentors.

Since 2013, Karumbaiah has served as an assistant professor in the animal and dairy science department of UGA's College of



*Lohitash Karumbaiah*

Agricultural and Environmental Sciences and the university's Regenerative Bioscience Center.

He wants the students and younger scientists he works with to know the importance of an open mind and the ability to chart one's own path, even in the sometimes-siloed halls of academia.

"Sometimes it takes students a long time to find their passion—just like it did for me," Karumbaiah said. "But if you enjoy what you do, it's really a good place to start. And if you do that and are continuously pushing the

envelope then eventually you find your passion, I think. That's been my experience."

Although he's always worked in biochemistry in some form or fashion, Karumbaiah set his sights on neuroscience and neural tissue engineering

[Read more on our website.](#)

### In this issue

- Assistant Professor Lohitash Karumbaiah
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- Student spotlights

### Department Info

#### Department of Animal & Dairy Science

E.L. Rhodes Center  
425 River Road  
Athens, GA 30602  
706-542-1852  
[ads.caes.uga.edu](http://ads.caes.uga.edu)



# From the Department Head

Dear Alumni, Students and Stakeholders:

This is the first edition of our Animal and Dairy Science newsletter. When I became the department head last May, one of the things that I wanted to do was improve our communications with alumni, students, and stakeholders. Therefore, we have started this newsletter to let you know what's going on in the department, and highlight some of our people and events. First, I want to tell you how honored I am to be part of the Animal and Dairy Science Department (ADS). Since my arrival this past May, I have been overwhelmed by the support for our Department and College. We have a vibrant group of faculty, staff, and students who are working hard and doing amazing things! As a matter of fact, at this year's annual CAES Undergraduate Research Symposium, ADS students captured 6 of the 12 awards! That's impressive in a college with a lot of tremendous work being done. [Here is the link to the story on the symposium.](#)

One of the easiest ways to keep in touch with the department is to visit [our website](#), as we're constantly working to update the information so that you can see what our students and faculty are doing, and to find upcoming events.

I want to help make our meat science program one of the best in the country, and we need more people in order to accomplish this! We are in the process of advertising a molecular muscle biologist position so that we can have a group that looks at meat from the molecular level to the plate.



*Francis Fluharty, Animal and Dairy Science Department Head*

In addition, we are very pleased to announce that Dr. John Gonzalez, an Associate Professor in meat science and muscle biology joined ADS this month! John is highly-regarded, and we are very excited that he's here.

Georgia has cattle in every county, and we need a greater presence in the area of reproductive physiology, so that we can have programming that helps to move the beef industry forward. We are in the midst of a search for a reproductive physiologist who will take over teaching beef production, and be responsible for Extension programming in the area of reproductive physiology. We have tremendous opportunities to do outreach education in the areas of genetics and reproductive physiology, as we have an outstanding, world-renowned breeding and genetics group in ADS, including Daniela Lourenco and Ignacy Misztal, the scientists who developed the Single-Step genetic evaluation method that has been adopted by the American Angus Association.

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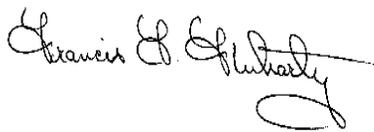


# From the Department Head

(Continued from page 2)

I hope that you can share my enthusiasm for the future of Animal and Dairy Science at UGA.

I would like to update you on some events that have occurred, or will occur, in ADS. The number of undergraduate students in the Department continues to grow, with 331 students during the 2018 fall semester, with an additional 41 graduate students in ADS. During 2012, ADS faculty numbers fell to 20. Currently we are at 29 faculty members, and ADS expects to add 2 more faculty members during 2019, which will bring our faculty total to 31. Our Department has a strong tradition of service, and we will continue our service to the animal and dairy industries through applied and basic research that benefits animal agriculture, and a great group of Extension faculty who translate the research into programs that are useful to the industry, as well as a world-renowned [Regenerative Biosciences Center \(RBC\)](#) led by Dr. Steve Stice. You will read more about the exciting work that's being done in the RBC in this first edition. I want people to feel free to contact me, and my e-mail is [ffluharty@uga.edu](mailto:ffluharty@uga.edu). GO DAWGS!



## Upcoming Events

### Livestock Judging Camps

For students in grades 6-12.

Two camp dates to choose from:

- June 24-26
- June 27-29

Application deadline: **May 24**

### Calhoun Herd Sale: May 29



## Daniela Lina Lourenco

Article by Merritt Melancon

As an undergraduate student in Brazil, Daniela Lourenco knew that she loved statistics and genetics, but she wasn't sure where that passion would take her.

Then an introductory course in animal breeding genetics — the same class she now teaches to undergraduates at the University of Georgia — set her on a path that has allowed her to collaborate with scientists around the world.

“My husband (who is also an animal scientist) told me there was this very cool class called ‘Animal Breeding Genetics.’ He said, ‘It works a lot with both genetics and statistics. I think you’ll like it,’” Lourenco said.

She took a plant genetics course too, but found livestock genetics much more exciting.

“I like statistics and math and genetics, and this field combines everything,” she said.

Lourenco, who first came to UGA to finish her doctoral research, serves as an assistant professor in the Department of Animal and Dairy Science. Her research focused on using big data analytics to improve livestock breeding, which is still her focus today.

For years, breeders used information about an individual's lineage and phenotypes to rate that animal's breeding value. The advent of advanced genetics and genomic technology gave breeders access to thousands more data points to analyze before making breeding decisions.



*Daniela Lina Lourenco assistant professor in the UGA College of Agricultural and Environmental Sciences (CAES) Department of Animal & Dairy Science*

Lourenco helped to develop a one-step method for integrating genomic information about each animal with their phenotype and lineage information to produce a breeding value for each animal. She also helped implement this one-step method for the American Angus Association for both Angus and Charolais beef cattle, and she helped resolve one-step evaluations for dairy cattle, pigs, chicken and fish, including catfish and rainbow trout.

Working with a team of geneticists and programmers in the UGA Animal Breeding and Genetics Group, she has helped to improve software that is used all over the world. Scientists often visit Athens, Georgia, to work with the group, and Lourenco now travels to consult and speak so often that, in a single year, she has earned enough airline miles to travel around the world almost three times.

Currently, she's working to refine software models for millions of animals and improve the accuracy of the estimated breeding values (EBVs) the models generate.

[Read more on our website.](#)



# Student Spotlight

## Min Kyoung Sun

Min was granted admission to UGA through the very competitive 'Integrated Lifesciences Program' and subsequently joined Lohitash Karumbaiah's lab in January 2017 where she is currently pursuing a PhD in Neuroscience. Prior to joining UGA, she graduated with a Bachelor of Science in Neuroscience from the University of Pittsburgh, where she was consistently on the Dean's Honor's List. Since joining Dr. Karumbaiah's lab, Min has been developing an engineered tissue scaffold that is designed to replace lost brain tissue after a severe traumatic brain injury. In the short time that Min has been in Karumbaiah's lab, she has published one co-authored conference proceeding in collaboration with fellow ADS faculty Dr. Luke Mortensen's lab and has submitted one first-authored publication in collaboration with fellow ADS faculty member Dr. Steven Stice.

Min demonstrates great attention to detail in her work and enjoys working collaboratively with other students and postdocs in the department. Her collaborative spirit is also showcased in her



*Min Kyoung Sun*

involvement in cross-institutional research efforts such as the National Science Foundation funded Engineering Research Center for Cell Manufacturing Technologies (CMaT), where she is a member of the student leadership team that is spread out across four national universities. In addition to her research, she continues to serve as an undergraduate research mentor for several UGA undergraduate researchers, many of whom have been awarded center for undergraduate research opportunities (CURO) scholarships annually.



# Student Spotlight

## Darren Seidel

Darren Seidel joined the Department of Animal and Dairy Science in January of 2018 after receiving his master's degree in agricultural systems management from Purdue University in August of 2017.

Raised in Sanderson, Texas, he helped raise cattle, goats and sheep on a family friend's ranch through the majority of his childhood. During his formative years, Darren worked with sheep and learned wool and sheep judging. He became deeply involved with ruminant production in West Texas.

Farming in West Texas is a dry pursuit, and his interest in the role of the land and water in raising animals led him to Angelo State University in San Angelo, Texas, where he majored in both animal science and geosciences. His undergraduate research project was entitled "Using areas of concentrated *E. coli* bacteria to identify species-specific sources in urbanized sections of the Concho River, Tom Green County, Texas."

While in the process of earning this bachelor's degree, he participated in intercollegiate judging teams for livestock judging, meats judging, and wool judging. This experience rounded out his knowledge of animal production, and he decided to pursue a master's degree at Purdue University in Indiana. His research project was titled, "Investigation into the effects of temperature probe orientation on the Purdue Swine Cooling Pad." He studied the effects of heat stress on swine production and animal welfare.

Darren then decided to expand his knowledge into the function of the gut in sheep, goats, and cattle by coming to UGA to pursue his Ph.D. His research has been focused on understanding how the microbes from the rumen can detoxify and utilize toxic phytochemicals found in plants common to arid regions of the country, such as his home area. He has collaborated with animal scientists at Texas A&M AgriLife research, where goats that were able to grow well on



*Darren Seidel*

Juniper shrubs were compared with goats who did not grow well on this phytochemical-containing plant. After arriving at UGA, Darren received a National Science Foundation-funded Ph.D. Fellowship through the UGA Odum School of Ecology in "Interdisciplinary Disease Ecology Across Scales." In the summer of 2019, Darren will intern with Merck Animal Health to understand how the animal health industry works with animal nutrition and production.

Darren is one of the hardest working students we have, and in his spare time he works with several cattle producers on their farms in Oglethorpe County, and he has become highly involved with improving our UGA sheep flock and has helped us rejuvenate the flock genetics. He has also been deeply involved in working with UGA's judging teams, student recruitment, teaching undergraduates and has judged several sheep and goat shows across the state of Georgia. His involvement in Georgia agriculture and agricultural science at all levels makes Darren a star student in UGA Animal and Dairy Science.

