

Have You RD

Fall 2023

UF/IFAS Department of Animal Sciences

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COVER PHOTO



Rams photographed at the UF/IFAS Extension Small Ruminant Short Course and Ram Test Sale.

Photo Credit: UF/IFAS Photography

See page 1.

LETTER FROM THE CHAIR

Dear alumni, friends and supporters,

Another year is complete! I want to first personally congratulate our students, staff and faculty on all of their accomplishments, awards and recognition over the last year. A special congratulations to Dr. Joel Brendemuhl on his retirement after 38 total years of commitment to Animal Sciences and the College of Agricultural and Life Sciences.

Engaging with alumni is vital to the success of our program and a priority of mine. In this edition of our newsletter, you will see a few of our "In Five Years" students that graduated from our department 5 years ago. The goal of this project is to serve as a reference for all students, whether they were just admitted or recent graduates of our department. We hope students will be able to visualize the many career pathways the Animal Sciences degree has to offer through this project!



John Arthington
PROFESSOR & CHAIR

This semester our department has also been working hard to continue developing research. Beginning on page 6 you will see an overview of Dr.

Mario Binelli's research on the acceleration of puberty attainment in Bos Indicus heifers. The overall goal of Binelli's program is to maximize the proportion of beef cows pregnant at the end of the breeding season, with a particular focus on Bos Indicus-based cattle operations. You will also see an overview of Dr. Samantha Brook's research on AI approaches to locomotor phenotyping in livestock. This technology will further assist in developing identifiable markers for genes associated with the characteristic gaits of horse breeds, and in creating a genetic diagnostic tool that will prove as an innovative approach to genetic breeding selection.

This semester we were visited by six new "Have You HERD" students. Each of these students were offered an individualized experience at ANS. The program connects students with invaluable resources and serves as a stepping-stone for their potential academic and professional pursuits in the animal industry. The ongoing success and demand for the Have You HERD program emphasizes the importance of working with industry-seeking students before they begin college.

As always extension events are a priority for our department. This semester we again hosted the UF Small Ruminant Short Course and Ram Sale, turn to page 14 for highlights of this event. ANS staff and faculty have already started preparing for the 2024 event where we will be adding a Buck Test. We are also working hard on the Family Day at the Dairy Farm, Ruminant Nutrition Symposium, 73rd Annual Beef Cattle Short Course, the Brahman Bull and Heifer Sale, and Sale in the Swamp just to name a few. Be sure to check our website and social media pages for updates on upcoming events and news about our department.

Please enjoy our latest newsletter which follows. Flip to page 21 for several upcoming opportunities to become involved within ANS. Thank you for all you have done and continue to do to move the ANS mission forward. We could not do what we do without our alumni, friends and stakeholders who generously support our efforts in so many ways. Whether you are giving through financial support, your time to speak to our students, or providing jobs and internships, we cannot say thank you enough. If you are interested in giving, please visit https://give.ifas.ufl.edu/animal-sciences-giving/ to learn about various giving opportunities or feel free to reach out to me directly

Sincerely,

John Arthington
Professor and Chair

In Five Years

Fall 2018 Alumni of the UF/IFAS Department of Animal Sciences



Sydney Liles

Deli Senior Supply Chain Analyst

Cargill

In Five Years is a project created by Amie Imler and Annabel Hensen as a way to highlight the Animal Sciences Alumni who graduated five years ago. The goal of this project is to serve as a reference for all students, whether they were just admitted or recent graduates of our department. Our alumni are part of the foundation of our department and we are excited to see where they are now and what they have been up to since graduation. The hope for this project is for students to be able to visualize the many career pathways the Animal Sciences degree has to offer!

Scan here to read more about what our Alumni have been up to!

Sydney Liles graduated from our department in the Fall of 2018. She studied Animal Sciences with a Food Animal Specialization and Meat Science Track. Liles came into UF knowing she wanted a career in agriculture, but was unsure of which path to take. She says her professors and mentors at UF helped her get involved with extracurriculars like meat judging, which exposed her to career paths she didn't know existed. Liles also interned with Cargill during undergrad. This internship gave her more insight into the meat industry, and led her to accepting a full-time position at Cargill's ground beef facility in South Carolina after graduation.

Advice to a Senior: It's okay if you feel like you don't have it all figured out quite yet, you'll get there!

Involvement while at UF: Meat and Livestock Judging Teams, Beef Unit Employee, Meat Lab Employee



Ashley Caudill

Account Manager
Wayne Sanderson Farms

Ashley Caudill graduated from our department with a Food Animal Specialization in the Fall of 2018. She attended IPPE, which allowed her to secure an internship at Wayne Sanderson Farms, as well as full-time job offer before returning to her last semester at UF. After her internship, Caudill began her role as a Production Supervisor. She then spent a short time as a Breeder Service Representative at Pilgrim's before returning to Wayne Sanderson Farms as a University Recruiter, and then Regional Recruiter. Caudill has recently taken the role in Fresh Sales as an Account Manager and is thankful for the guidance she has received from her trusted mentors along the way.

Advice to a Senior: I only wish someone had told me to soak it in more! I didn't realize how fast it would go by and wish I could've been more involved in my 2 years there.

Involvement while at UF: Gator Collegiate CattleWomen, Meat Judging Team



Eilish Tanner

Law Student
University of Wyoming

Eilish Tanner graduated with a BS in Animal Sciences and a minor in Agricultural and Natural Resource Law in the Fall of 2018. In one of her final semesters at UF, Tanner took an elective class, Agricultural Risk Management and the Law, and was surprised by how much she enjoyed the course. She then decided to take up a minor, which led her to finding her true passion in life. This minor led her to find a legal assistant position within a rural law firm, that mainly works with ranchers. This job, as well as the UF/IFAS Extension internship she did in undergrad revealed this passion for helping cattle ranchers through law.

Advice to a Senior: Just remember, the worst thing that can happen if you take a risk, is that you gained experience and learned valuable information on that line of work and about yourself.

Involvement while at UF: Gator Collegiate CattleWomen, Meat Judging Team

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Research Spotlight

Acceleration of Puberty Attainment in Bos Indicus Heifers

Dr. Mario Binelli, Associate Professor of Physiology at the UF/IFAS Department of Animal Sciences, obtained his Ph.D. from the University of Florida in 1999. After working as a faculty member at the University of Sao Paulo in Brazil for several years, he returned to his Alma Mater, the University of Florida.

The overall goal of Binelli's program is to maximize the proportion of beef cows pregnant at the end of the breeding season, with a particular focus on Bos Indicus-based cattle operations. Binelli pursues this goal by conducting basic and applied research to understand and manipulate female reproductive tract functions to support embryo-conceptus development and pregnancy success.

Over half of beef cattle pregnancies are lost during the first three weeks following insemination. Binelli aims to increase the odds of a successful conception from each insemination and develop methods to quickly re-inseminate after a failed insemination is detected.

The Binelli Lab comprises three graduate students, two visiting professors, one visiting scholar, and four undergraduate students. Lab members focus their research on accelerating puberty attainment in heifers and developing tools that predict fertility in cows.

Due to the harsh climate and environment, most Florida ranches implement a proportion of Brahman genetics into their herd. Bos Indicus cattle have been observed to possess characteristics that make them more resilient to Florida's warm and humid climate and parasites. However, Brahmans are notorious for delayed puberty attainment in heifers compared to Bos Taurus cattle.

In a practical sense, heifers who do not attain puberty as yearlings (i.e., 12 to 15 months) will have their first calf at 36 months. This delayed conception will undoubtedly cost the producer. The Florida Beef Enhancement Board has funded Binelli's lab to develop a method to identify heifers that will attain puberty as yearlings before they are exposed to reproduction.

"When I started as a UF faculty, beef producers told me that they would be willing to invest in technologies directed to predict fertility in the yearling heifer. My first step was implementing a tool to measure heifer sexual maturity: the reproductive tract score. After three years of running this program in Florida and checking over 5,000 heifers, we determined that about 1/3 of heifers were immature and would have sub-optimal fertility as yearlings. However, at the moment the heifers were evaluated, it was already too late to change course." Binelli said.

Binelli explains how his lab devised a different strategy to achieve their goal. He asked, "What if we could develop a test to predict which heifers would be mature at the time of breeding as yearlings? And, what if that test could generate results early enough to allow the producer to make culling decisions in advance, before the time of breeding?"

Binelli uses metabolomics technology to screen the blood of mature and immature heifers at the time of breeding. He took blood samples from heifers four months before the beginning of the breeding season, when they were all immature. After running metabolomic analysis, he and his former master's student, Meghan Campbell, discovered substances in the blood, called molecular markers, that differed in concentrations between to-be mature and immature heifers.



"We are now in the process of further validating these markers on a larger number of animals," said Binelli. In the future, Binelli's lab aims to develop a panel of markers that could accurately predict puberty attainment in heifers. Binelli said, "Such a tool would be highly relevant to Florida beef operations that use yearling heifers as replacements."





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UF Block & Bridle

Little International

Little International is a multi-species livestock show hosted annually by the UF Block & Bridle Club as a new member initiation event. Little International, more commonly referred to as "Little I", grants new members to the club with an opportunity to show a livestock species that they have never shown before. This year, our members were able to choose between showing beef heifers, horses, or pigs, participating in species-specific teams coached by experienced members. Participants put in hours of practice each week in preparation for the show, which this year was held on Friday, November 10th at the UF Horse Teaching Unit. Special thanks goes out to our unit managers for allowing us to work with their animals for the show and for use of their units for practice!

Participants got to put their newfound showmanship skills to the test on the day of the show by competing in species classes, where only two exhibitors from each class would move on to the round robin. The round robin is where the selected two exhibitors from each species class now have the chance to show off their showmanship skills by showing all three species. This year, participants in the round robin were Emma Joyal and Eddith Cortes of the heifer team, Savannah Stephens and Michael Garcia of the equine team, and Raelyn Simmons and Marissa Souders of the swine team.

UF Block & Bridle is so proud of the 33 new members who participated in this year's Little International Livestock Show. Each member dedicated their time to learning how to exhibit their respective species and has proven their commitment to the club and its mission. Thank you to our team coaches for all of your hard work and dedication in assisting our new members. We are pleased to share that the 2023 Little I Grand Champion showman was Emma Joyal, and our Reserve Champion showman was Savannah Stephens. Congratulations to these two ladies on this accomplishment, and congratulations to all those who participated! UF Block & Bridle would like to thank our species judges, Mr. Dusty Holley (beef), Mrs. Cori Wiygul (equine), and Mrs. Cathy Carr (swine), for their time and talents in judging our classes. Thank you to our wonderful Vice President, Rebekah Thomas, for her commitment to the planning of this staple Block & Bridle event - she did a fantastic job and we are very grateful for her! We would also like to sincerely thank our advisors, alumni, and members for their support and commitment to the success of this club and show. Finally, a huge thank you to our sponsors: TenBroeck Farms, Beard Equipment, Sumner Engineering & Consulting, Inc., Thomas Farms, Tractor Supply of High Springs, the Harrisons, Amazing Grace Family Farms, and Vytelle. Without your contributions, this event would not have been possible.

We are looking forward to all that is to come in the next semester. UF Block & Bridle will put on our annual clay shoot, the Ray Kempfer Memorial Clay Shoot, as well as Ropin' in the Swamp, our annual team roping fundraising event. Our new members have hit the ground running, and we cannot wait to see what they will contribute to the club.

Spotlight by: Taylor McKinney













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Al Approaches to Locomotor Phenotyping in Livestock

The UF/IFAS Department of Animal Sciences (ANS) is working to assess livestock mobility faster and more accurately than ever before. Researchers within the department are using artificial intelligence (AI) to analyze livestock locomotion.

Samantha Brooks, UF/IFAS geneticist and Associate Professor of Equine Physiology, and other UF researchers, were awarded a \$49,713 grant from the Agricultural Genome to Phenome Initiative (AG2PI) to fund this research.

Dr. Brooks and her team of researchers are using machine learning in tandem with gait analysis to speed their assessment of livestock mobility from a physiological standpoint, as seen in the photo at the top of page 11.

"Our long-term goal is to build an automated pipeline that could produce results nearly in real-time, just seconds after the animal passes by the camera," Brooks said. "This pilot project is a first step toward that goal."

Brooks referenced exactly how this new technology can help in a real-world scenario. One veterinarian can complete a basic lameness exam in about 15 minutes, while this technology can analyze the horse's movement in nearly real-time.

"The ultimate goal of the research is to develop a system that will allow us to search for genetic backgrounds, or genomatic traits, that are related to equine movement," said Ph.D. student Weronika Klecel.

Klecel, who is pursuing her Ph.D. under Brooks, is focusing her research on "Utilizing Deep Neural Networks to Assess the Quality of Movement in the Arabian Horse" and uses the same Al software. One of her objectives is to identify specific kinematic traits associated with optimal performance of the Arabian horse. she also aims to build a database of phenotypes for further genetic analysis.

Klecel explained that the current means for measuring livestock mobility in the industry are quite vague - as there is no quantitative scale to visually assess movement with. Instead, the industry uses general assessment terms to describe if a horse is moving "good or bad". The use of this technology will quantify the mobility in an almost immediate manner to better assess such movement.

Brooks' research lab uses a wvideo database of thousands of videos of horses in motion to analyze locomotion. Researchers will then review the AI data and look at traits like stride length, stance time, and limb extension. The large database enables more accurate models and mobility readings.



View an example in motion: https://youtu.be/fH9caRJMfjM

The lab is currently working with a multitude of equine videos, and will expand their research to build AI models that analyze other livestock like swine, cattle, sheep, and goats. In swine and cattle, researchers will primarily analyze anatomical postures and asymmetry that indicate limb pain and abmornal function.

While AI is an innovative and helpful tool for the further development of locomotion phenotyping in horses, it is not always intuitive.

"Artificial intelligence approaches can accelerate our ability to measure complex locomotor traits in livestock, with better accuracy than the human eye," Brooks said. "Yet, AI tools often are not biologist-friendly, nor are they ready for challenging, on-farm applications."

"To cope with these issues, we hope to adapt and assemble existing AI methodologies into an analysis package accessible to scientists of diverse backgrounds and deployable in a variety of livestock management settings." This technology could eventually play an integral role in the livestock industry. Along with the convienence of completing lameness exams with the click of a button, this software program can be used with practicality on the farm or ranch.

For example, if utilized on a dairy cattle operation, a camera could assess the locomotion of every cow as they enter the milking parlor, detect potential lameness, and alert the farmer.

This technology will further assist in developing identifiable markers for genes associated with the characteristic gaits of horse breeds, and in creating a genetic diagnostic tool that will prove as an innovative approach to genetic breeding selection.

For more information on the Brooks Equine Genetics Lab, visit:

http://www.ufequinegenetics.org/home.html









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Have Von ESED

The UF/IFAS Animal Sciences Department kicked off the second year of the Have You HERD student program (HYH) this semester by hosting six high school students throughout the fall.

Fall 2023 Have You HERD Students

Cate Solomon
McKenzie Locke
Leydializ Aviles
Kayden Duncan
Emily Shvetzoff
Hunter Taylor

Have You HERD is specifically designed for high school students with a deep interest in animal agriculture and a desire to pursue a major in animal sciences at the University of Florida. By offering an individualized experience, the program connects students with invaluable resources and serves as a stepping stone for their potential academic and professional pursuits in the animal industry.

The group this semester was a driven group of seniors that all sent in applications as aspiring fall 2024 UF freshman. This program gave each student a unique opportunity to envision themselves at UF. Should they choose to attend UF in the future, they have a distinct advantage to maximize their college experience through the connections made with our faculty, students, and organizations.

The ongoing success and demand for the Have You HERD program emphasizes the importance of working with industry-seeking students before they begin college. We are looking forward to hosting 7 more students this upcoming spring 2024 semester!

Learn more about the Have You HERD student program by visiting: https://animal.ifas.ufl.edu/students/have-you-herd/.











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SMALL RUMINANT SHORT COURSE & RAMTEST SALE

The second UF/IFAS Small Ruminant Short Course was hosted Friday, September 29th and Saturday, September 30th in Gainesville, Florida. This event is a collaborative effort between the Department of Animal Sciences, UF College of Veterinary Medicine, and Department of Agronomy. The Florida Agricultural and Mechanical University (FAMU) and numerous UF county extension agent faculty are also partners in this program. The two-day conference and trade show was a great success! The attendance for this year's event was amazing, with 233 attendees (up from 150 attendees in 2022). This is an excellent demonstration of the eagerness this industry has to learn and their capacity for extension outreach and engagement. A great big thank you goes out to all the individuals involved to make this event possible – it certainly takes a team. Dr. Brittany Diehl and Dr. Izabella Toledo led the charge as event chairs for this year's successful event.

In addition to the short course, the 2023 UF Ram Test Sale (online auction) was also held during the event. There were 17 rams sold for an average of \$922/ram and the highest selling ram sold for \$5,350. This program just completed its 3rd year and has grown in popularity amongst producers throughout the southeast. In response to the small ruminant industry's desire for expansion of these programs, we will be launching the inaugural UF Buck Test & Sale in 2024. This Buck Test will run parallel, but separately from the Ram Test. The online sale of the top performing rams and bucks will take place at the 2024 Small Ruminant Short Course. The department looks forward to the continued success of the UF Ram Test & Sale and is excited for the opportunity to begin this program with bucks next year. These events are also collaborative efforts between the Department of Animal Sciences and UF College of Veterinary Medicine. Clay Whitehead and Dr. Brittany Diehl lead the coordination of these events. Please be sure to check the department website for updated information as it relates to all these upcoming events. The 2024 Small Ruminant Short Course and Ram Test Sale will be held Sept. 20 - Sept. 21, 2024.

Internship Seminar









The Department of Animal Sciences hosted its annual Internship Seminar on Wednesday, October 11th, at the UF/IFAS Extension Straughn Professional Development Center. This year, 54 Animal Sciences students presented their internship experiences, and 14 companies attended the event for networking opportunities. Students, faculty, and friends of the UF College of Agricultural and Life Sciences participated in the event. Industry partners from various parts of the state also attended the event to network with students. The event allowed students to share their internship experiences and connect employers and students with upcoming internship and full-time job opportunities. We want to thank all of our students, staff, faculty, and stakeholders for supporting this event. We want to extend a special thank you to Amie Imler for coordinating such a successful evening!

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EQUINE SCIENCES PROGRAM ENDOWMENT

"HORSES WITH A FOUNDATION... STUDENTS WITH A FUTURE"

The UF/IFAS Department of Animal Sciences (ANS) Equine Sciences Program Campaign seeks to establish an endowment to support education, extension and research efforts. These funds will provide annual support for the maintenance of the ANS horse herd which is essential to the ongoing teaching, research, and extension activities in the equine sciences program.

THE NEED

Most of the equine-related courses taught in ANS have a laboratory component allowing 500+ students to interact with horses and gain hands on experience every year. The wide range of experiences students gain include breeding, training, marketing, farm management and health care.

The equine sciences program also supports cooperative extension programs that target youth and adults interested in the horse industry. Our faculty work on cutting-edge research that will impact the future of the equine industry. With focuses on genetics, reproduction,



nutrition, and behavior and welfare, our faculty are working to treat disease, identify genetic markers associated with movement patterns, and improve genetics through gene editing strategies.

As time goes on, it is becoming increasingly more expensive to support the horse herd, making the need for an endowment vital to the future success of the Equine Sciences Program. Without this herd, the program will be crippled and unable to create the hands-on experiences that sets the program apart from others in the country.

Scan here to learn how you can support our Equine Sciences

Program!



PAG Australia

International Plant and Animal Genome Conference

The International Plant and Animal Genome Conference (PAG Australia) took place Sept. 20 - 22 in Perth, Australia. This conference is designed to provide forums on recent developments and future plans for plant and animal genome projects worldwide. The variety of technical presentations, poster sessions, exhibits, and workshops made this conference an excellent opportunity to exchange ideas and applications for internationally relevant genome advances.

University of Florida Animal Sciences professor, Raluca Mateescu, organized a symposium during the inaugural PAG Australia titled, "Unlocking The Potential Of Brahman Genomic Research For Sustainable Beef Cattle Production."

The theme of the workshop revolved around the role of Brahman cattle in worldwide sustainable beef production systems, with a particular focus on current genomics research to enhance the productivity, health, and sustainability of the breed. The workshop provided a platform for experts in the field to share their knowledge as well as to discuss the latest genomics research findings and their practical implications.

Gabriel Zayas, a Ph.D. student in Animal Genetics and Genomics, participated in the workshop with an invited presentation "Decoding the Genomic Landscape of Heterosis for Production Traits in Bos Indicus-Influenced Beef Cattle."

Congratulations

New Faculty Faces



Dr. Izabella Toledo Extension Assistant Scientist

New Staff Faces



Megan Kelly Program Assistant



Brody Dean Facilities Operations Specialist

Faculty Awards



Dr. Saundra TenBroeck FDACS Woman of the Year in Agriculture



Dr. Joel Brendemuhl Retirement after 38 years at UF

Department of Animal Sciences Ambassadors



Cole Baggett **Animal Biology**



Kylie Del Castillo
Animal Biology



Abigail Lovett
Animal Biology



Rebecca Lyons Integrative



Mikaela Martin **Food Animal**



Taylor Mckinney Food Animal



Douglas Natoce Food Animal



Payton Rethmel Food Animal



Integrative



Jillian Runyon Animal Biology



Karina Vestergaard **Animal Biology** Have You HERD? | 19

Awards & Recognition

Equine Eventing

- UF Orange Team members include: Lucy Walter, Emma Joyal, Janna Scholtz
 - The team won 1st Majestic Oaks HT Intercollegiate Challenge
 - Team rider Emma Joyal won 1st place Novice Division
- UF Blue Team members include: Beatriz Castanho, Muhammad Sharoze Rehman, Ryley Albury
 - The team won 3rd Majestic Oaks HT Intercollegiate Challenge
- UF Eventing also competed at the Intercollegiate Challenge at Stable View's Oktoberfest in Aiken, South Carolina
 - UF/USC Scramble: Janna Scholtz won 1st
 - UF/UGA Scramble: Lucy Walter won 2nd



Awards & Accomplishments

- ANS Faculty Dr. Saundra TenBroeck was named as the Florida Woman of the Year in Agriculture by the Florida Department of Agricultural and Consumer Services.
- Dr. Arie Havelaar was recently selected for appointment to the 2023-2025 term of the USDA's National Advisory Committee on Microbiological Criteria for Foods (NACMCF).
- M.S. student, **Gerald Salas-Solis**, was selected as a UF CALS International Student Outstanding Achievement Award winner.
- Promotion of Dr. KC Jeong (Professor) and Dr. Mario Binelli (Associate Professor). Dr. Carl Jiang was also recognized for his award of tenure at UF.
- CALS Associate Dean and Undergraduate
 Coordinator and previous Animal Sciences
 professor, Dr. Joel Brendemuhl, retired this fall
 after a long and impactful career at UF.
- USDA's National Institute of Food and Agriculture (NIFA) awarded a \$5M investment in **Dr. Nicolas DiLorenzo's** beef research program focused on advancing the science of reducing methane naturally produced by ruminant animals.

SHARE YOUR STORY WITH US

We enjoy hearing updates from our alumni!

Do you have internship or job opportunities for animal sciences students?

Are you interested in speaking in an undergraduate class about your career?

Would you like to be featured in a **Have you HERD** Alumni Spotlight?

Visit our website to learn how to be involved with the UF/IFAS Department of Animal Sciences!

CONNECT WITH US ON SOCIAL MEDIA @UF_ANSCI









Upcoming Events



CHECK OUR WEBSITE FOR UPDATES
ON ALL OF OUR EVENTS!

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2023 Penn



























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UF/IFAS Animal Sciences Department

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Your generous donation to the UF/IFAS Animal Sciences Department will provide support for our students, faculty and staff.

To support ANS, our scholarships and more, visit give.ifas.ufl.edu/animal-sciences-giving/.

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