Poultry Science
Connections
Spring 2021
UNIVERSITY OF GEORGIA COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES

A Note From the Department Head

Dr. Todd Applegate
Department Head and Professor

Dear Friends:

Spring has come to the Athens campus, and we are thankful to our strong, supportive community. I am ever appreciative and amazed at the resiliency of our students, staff, and faculty for all they have been able to accomplish and achieve in the face of adversity.

Speaking of resiliency, we're so proud of our 16 Poultry Science BSAs, 12 Avian Biology BSAs, and 79 Biological Sciences BSAs this spring semester. While it has not been your ideal final academic year, you all have persevered and your future is truly bright! Fall semester is on track as well for us to have another record year of graduate students, and it looks like we will have approximately 65 students. A testament to continued efforts of our faculty. Our graduate students truly are the backbone to our continued success.

While we are still emerging from our "pandemic cocoon", our Extension group is back to traveling to area/state 4-H and FFA poultry judging contests (with some modifications and additional precautions). While we have not been able to conduct in-person workshops or conferences, we have shifted some of these on-line. This spring's line-up included our International Poultry Short Course, the Deep South Poultry Conference, Tunnel Ventilation webinar, HACCP Roundtable, and a Precision Poultry Farming Conference.

Our focus on the future of the department has been my "North Star" over the past year. In concert with our new Dean, Dr. Nick Place, and our college's Office of Development and Alumni Relations, we have had some amazing conversations with our public and private partners. We are thrilled to announce that we have legislative approval for $21.7M in public support for our new Poultry Science building, and is awaiting Governor Kemp's signature. This is the second and largest phase of public commitment, having received funding to initiate architectural design during our current fiscal year. I am humbled by the outpouring of support during our capital campaign to raise $27.5M from private donors for half of the building. In spite of record high feed costs, many are seeing the long-term opportunity to solidify the future of Poultry Science in Georgia and UGA.

We've been actively engaged with our university architect's office, the architectural design firm (FLAD), and construction management firm (McCarthy) since the beginning of the year, and will have conceptual floor plans and exterior of the building by early June. This April, we began the "micro-design" programming for the building with our faculty. In the new building, faculty are re-organizing into six lab communities to aide in establishing functional collaborations, and raising the bar on innovations and solutions to complex issues facing the poultry sector. A quote from John Maxwell keeps coming to my mind as I reflect on how we are positioning ourselves physically and philosophically, "One is too small of number to achieve greatness".

As we look to building stronger partnerships and teams internally, we also are asking others, "What does success, and a successful partnership with UGA-Poultry Science, look like?" To that end, we've begun a review of our Poultry Science and Avian Biology majors this spring. We reached out to alumi (since 2005) and those that have employed and interviewed our students. To those that provided input, a huge thank you in helping guide our decisions. While we have not made concrete decisions, we will be positioning the Poultry Science major to become more flexible. That flexibility could come in a number of forms, including establishing a better footing for an advanced degree, or ability to take courses that would better develop their people-skills (e.g. agricultural communication, leadership, mentorship, human resource management, etc.).

Last but not least, I would encourage all of you to stay connected to the department, either through one of our social media channels (Facebook, Instagram, and LinkedIn; links through our website homepage), or better yet, reach out to Jessica Fife (jfife@uga.edu; 706-542-9153) and let us know about how we might better connect.

We are so grateful for your commitment to Poultry Science. Because science never sleeps, innovation is impatient, and hungry people around the world will survive and thrive on our success.

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Cooperative Extension Faculty at the University of Georgia Department of Poultry Science Host the Inaugural 2021 Georgia Precision Poultry Farming Conference

Claire Marie Coleman
Department Communications Intern

Cooperative Extension faculty at the University of Georgia Department of Poultry Science are hosting the inaugural 2021 Georgia Precision Poultry Farming Conference virtually on May 4, 2021. This conference will provide attendees a training and exchange opportunity through speaker presentations as well as a discussion panel at the end of the day. This discussion panel will allow industry professionals, researchers, and producers to work together and discuss the impact precision farming has and will have on the poultry industry. "As the top poultry production state in the U.S., Georgia is home to many nationally-ranked poultry production and processing companies as well as a multitude of companies supplying poultry technologies to the world. The 2021 Georgia Precision Poultry Farming Conference provides a training and information exchange opportunity for stakeholders on the challenges and opportunities related to the future of poultry farming. Invited speakers will introduce research, development, and application of precision poultry farming (PPF) to optimize production efficiency, environmental control, animal health/welfare management, and food quality/safety.

The 2021 Georgia Precision Poultry Farming Conference provides a training and information exchange opportunity for stakeholders on the challenges and opportunities related to the future of poultry farming. Invited speakers will introduce research, development, and application of precision poultry farming (PPF) to optimize production efficiency, environmental control, animal health/welfare management, and food quality/safety. - Dr. Lilong Chai

At this event, industry professionals, researchers, and producers will learn and discuss how precision farming technologies can and are impacting the poultry sector," said Lilong Chai, assistant professor and engineering specialist at the University of Georgia Department of Poultry Science. During the conference, attendees will hear from poultry scientists from the University of Georgia, University of Tennessee, Purdue University, and Georgia Tech Research Institute as well as the Vice President for Live Operations at Fieldale Farms Corporations and the Vice President of M-Tech Systems USA.

The Georgia Precision Poultry Farming Conference is an Extension conference initiated by Dr. Chai, with support from departmental administration and other Poultry Science/Extension team members This is a free event for those involved in the poultry industry, and registration is open now. For more information and registration, visit https://bit.ly/3mnnjUh or poultry.caes.uga.edu.

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Gabriella Allison Joins the Department of Poultry Science as a New Staff Member

Claire Marie Coleman
Department Communications Intern

The University of Georgia Department of Poultry Science is pleased to welcome our newest staff member, Gabriella Allison. Allison is joining us as a Research Professional/Teaching ILb Technician. When asked about her background in the poultry sector, Allison said, "ever since I graduated in 2014, I have been working with poultry in one form or another. I started out at Alexion Pharmaceuticals where I helped manufacture (a then experimental drug) Kanuma. This drug was harvested from the egg whites of chickens and used to treat LAL or lysosomal acid lipase deficiency. I then moved on to Boehringer Ingelheim to work in the production of HatchPak COCCI III, which is used to inoculate birds against coccidiosis. Being part of these two companies has given me a lot of experience working in pharmaceuticals on both the animal and human sides of medicine." Her new position within the department will primarily focus on helping professors with their classes and guiding students through the semester. Allison says she was attracted to the position because she wanted to learn more about the research and academic side of poultry science. In addition, Allison jumped at the opportunity to share her experiences with students and help with the education of future poultry scientists. She says, "I am most excited about meeting new people and learning more about the poultry department. I am looking forward to getting to know everyone throughout the year!" We are delighted that Gabriella Allison is joining our team and look forward to seeing her shine!

Student Spotlight

This edition's student spotlight is Mary-Grace Trogdon. Mary-Grace is a senior Animal Health major from Cumming, Georgia. When asked what her favorite poultry science memory is, Mary-Grace said, "I have too many amazing memories from the Poultry Science Department to pick just one favorite! I will always remember when Dr. Davis brought his African Grey to class! I would also have to say completing my first surgery in Dr. Ellestad's Avian Biomedical Techniques course and learning to place my first catheter in Dr. Benson's Avian Anatomy and Physiology lab!" After graduation, Mary-Grace would like to become a board-certified exotic animal veterinarian. In addition to her studies, Mary-Grace is also a member of the UGA College of Veterinary Medicine's Wildlife Treatment Crew. "As a member of the Wildlife Treatment Crew, I perform physical handling and restraint, husbandry, and nutrition of injured wildlife brought into the UGA Veterinary Teaching Hospital by good samaritans. This extracurricular activity is relevant to my work in poultry science, as the majority of the patients are birds - including raptors, passerines (songbirds), and even hummingbirds. We also see lots of reptiles, and much of what I learned in my poultry science courses can be extrapolated to these species as well!" We are so pleased to have Mary-Grace as a Bird Dawg and cannot wait to see all she will accomplish in the future!

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Dana Bubka, Avian Biology Major, Gets Accepted To Five Prestigious Colleges of Veterinary Medicine

Claire Marie Coleman
Department Communications Intern

The University of Georgia Department of Poultry Science would like to take this opportunity to congratulate Dana Bubka on her acceptance to the prestigious Cornell University College of Veterinary Medicine, Lincoln-Memorial University College of Veterinary Medicine, Tufts University College of Veterinary Medicine, University of Georgia College of Veterinary Medicine, and a full tuition scholarship to the University of Pennsylvania School of Veterinary Medicine. Dana is from Exton, Pennsylvania. She is a fourth year Avian Biology major, and her career aspiration is to become a poultry veterinarian. When asked about the impact the department had on her career goals, Dana said, "I truly think that the experiences and opportunities offered to me through the avian biology degree program were one of the biggest reasons that I was accepted to vet school. I've been able to get research experience, surgery experience, and mentorship from the poultry science faculty. I really believe that this unique degree made me stand out against a sea of thousands of other applicants." Dana says her favorite memory in the department was winning the "chicken trophy" in Dr. Drew Benson's Introduction to Poultry Science (POUL 2020) course. She says it definitely made her feel like she was in the right major and on the right career path. Currently, she is working as an Avian Ambassador for the Department of Poultry Science, and on school breaks, she works as a veterinary assistant at Radnor Veterinary Hospital in Pennsylvania. She is also the president and founder of Common Ground, a bipartisan political club at UGA that is focused on creating a positive dialogue between people from both sides of the political spectrum. Dana has decided to earn her DVM at the University of Pennsylvania School of Veterinary Medicine. We are proud of Dana's accomplishments and excited to see where this next step in her education takes her. Congratulations, Dana!

2020–2021 Outstanding Junior/Senior Award Winners

Outstanding Senior Award - Poultry Science

Kylie Bruce

Outstanding Junior Award - Poultry Science

Cory Yarbrough

Outstanding Senior Award - Avian Biology

Cierra Dunham

Outstanding Junior Award - Avian Biology

Madelyn Morgan

Outstanding Senior Award - Animal Health

Mary-Grace Trogdon

Outstanding Junior Award - Animal Health

Sarah Carlisle

Outstanding Senior Award - Biological Science

Noah Pierzchajlo

Outstanding Junior Award - Biological Science

Luke Frost

Naturally Occurring Compound Could Address Poultry Welfare and Production Issues

Claire Marie Coleman
For CAES News

Chicken is one of the most widely eaten proteins in the world. The poultry industry contributes more than $41.8 billion to Georgia's economy each year. The U.S. alone consumes 8 billion chickens per year and approximately 250 eggs per capita. With the help of modern breeding techniques, there has been a drastic increase in meat yield and egg production to help meet this high demand.

However, as chickens grow larger and produce more eggs, growth-related issues in broilers and laying hens have become more common. Researchers at the University of Georgia are finding ways to combat these issues, which can affect animal welfare and lead to production losses.

A recent journal article published in Poultry Science studied the effect of 20(S)-hydroxycholesterol, a naturally occurring bioactive compound, on satellite cell proliferation and differentiation of broilers and laying hens. Satellite cells are muscle-specific stem cells that are responsible for the post-hatch growth of skeletal muscles by increasing protein synthesis levels in muscle cells and resulting in muscle growth.

Led by Woo Kim and Yuguo Tompkins in the UGA College of Agricultural and Environmental Sciences, in collaboration with Sandra Velleman, professor at The Ohio State University, the study examined the use of the compound to potentially improve both bone health and muscle growth.

"One of my biggest research focuses is bone health. I am working with broilers and laying hens," said Kim, an associate professor in the UGA Department of Poultry Science. "With broilers, we genetically select for muscle growth, so there are bone issues, like lameness. My research aims to help the bone health in broilers and laying hens."

"One of the things about bone is that minerals and vitamins are very important. It is rare that we have other bioactive compounds to stimulate bone health and bone development. One of the compounds we found is 20S, an oxidized cholesterol that is naturally occurring. Certain compounds, like 20S, have potential bioactive properties. We found the 20S actually stimulates bone cell growth and also modulates muscle growth in some cases," Kim said.

Although higher amounts of 20S did cause negative effects on muscle development in the birds, Kim and his team have identified treatment levels that can improve bone health without having a negative effect on muscle development.

"20S has the potential to balance out the bone and muscle growth or be a biomarker to help find the edge between bone and muscle growth in both broilers and laying hens. This could also be beneficial in solving some of the animal welfare concerns," said Tompkins, a third-year doctoral candidate in Kim's lab who is studying broiler bone health and who facilitated communication with Velleman's lab in addition to performing lab research and writing.

The results of the study indicate that producers may be able to use this compound to prevent the loss of birds due to skeletal issues. This would mean more money for producers, more product for consumers and better bird health.

"We found that this 20S compound is actually stimulating bone cell growth and slowing muscle cell growth. It was the first time that anyone studied whether this specific compound regulated muscle cells. In the poultry industry, specifically the broiler industry, a big issue now is woody breast … white striping and also it looks like the muscle is abnormally formed," said Kim, adding that the defect affects meat texture and quality. "I think that this new naturally occurring bioactive compound can minimize the occurrence of muscle abnormalities in broilers."

Kim is looking at the research from an animal-welfare standpoint, as well as for production and meat quality.

"I want to become a problem solver. In the poultry industry, the main goal is production, but we also need to consider the environment and welfare. The bone-related issue is one of the important welfare issues. We want to promote meat production but minimize welfare issues in poultry. That is why I am interested in this bone-related research," Kim said.

The study, which was funded by the U.S. Department of Agriculture National Institute of Food and Agriculture under the Agriculture and Food Research Initiative program, also highlights the importance of collaborative research. For example, Franklin West, associate professor in the Department of Animal and Dairy Science, assisted Kim's team with the in vitro stage of the study, resulting in another publication in Frontiers in Physiology. Since West specializes in stem cell work, his expertise guided the team in reaching their research goals. Roshan Adhikari, who earned his doctoral degree in poultry science in 2017, and Shengchen Su, a former postdoctoral scholar in Kim's lab, also successfully established a novel mesenchymal stem-cell model derived from chicken compact bones and a bioactive compound delivery system to chicken embryos via in ovo injection during the 20S research.

2020–2021 Scholarship Recipients

Abit & Henry Massey Scholarship

Lydia Connell

Michael Davis

Billy Crider Scholarship

Madison Brown

Thomas Stokes

Caswell Scholarship

Grant Bennett

Madison Brown

Kylie Bruce

Mary Davis

Centurion Poultry Student Development Scholarship

Grant Bennett

Janelle Booker

Sabrina Dumanowsky

Sanisa Foungthong

Emily Hughes

Olivia King

Samantha Koehler

Kyrie Miles

Cayla Morris

Kateri Thon

Linh Voong

Abby Wilcox

Cory Yarbrough

Cummickel Scholarship

Sage Barlow

Emily Edelman

Dan Fletcher Scholarship

Rebecalyn Barber

GA Poultry Federation Scholarship

Alexander Caro

Thomas Stokes

Harrison Poultry Science Scholarship

Peyton Parker

Hatfield Scholarship

Anna Beth Barber

Jomari Rivera-Reyes

Hubbard Farms Charitable Foundation Scholarship

Patti Mitchell

J.B. Gay Scholarship

Kylie Bruce

Merka Scholarship

Alexander Caro

Roger Wyatt Scholarship

Sarah Kersey

Roy & May Durr Scholarship

Mary Davis

Scott Russell Memorial Scholarship

William Earley

Shutze Scholarship

Chloe Collins

Thomas A. Arrendale, Jr. Student Enhancement Scholarship

Christian Albritton

Till M. Huston Scholarship

Georgia Orman

W.A. Crider, Sr. Scholarship

Anna Climie

Madelyn Morgan

William Lee Arrendale Student Enhancement Scholarship

Sarah LeVan

Winston May Scholarship

Rebecalyn Barber

Anna Climie

Spring 2021 Graduates

Undergraduates:

BSA Poutry Science:

Emily Baethke
Ethridge Chaisson
Jacob Chastain
Audrianna Crews
Whitley Dale
Amelia Hamil
Hayley Parker
Dylan Reagan
Madison Smith
Logan Waldrop

BSA Avian Biology:

Avery Adams
Dana Bubka
Elizabeth Curry
Cierra Dunham
Camille Evans
Madison McClung
Angel Olvera
Alyssa Rauton
Bailie Sorah
Kidus Yared

BSA Biologial Science:

Avery Adams
Stacy Aibangbee
Melissa Ambrose
Grace Best
Mackenzie Brown
Cindy Burciaga
Jesica Burke
Justin Chan
Jae Choi
Donna Chong
Caleb Christian
Shakeria Collins
Bishop Dancy
Dalton Davis
Naomi Douglas
Sarah Dubin
Cierra Dunham
Zion Eberhart
Hannah Engels
Karen Ezenne
Nicole Fernandez
Joshua Fertig
Thomas Flowers
Chelsea Frimpong
Pinkney Gilchrist
Hannah Giles
Braxton Gise
Tanner Graham
Bob Harris
Madelyn Herrington
Darius Jackson
Erin Jarrett
Brian Kelley
Grace Kieffer
Jacob Knight
Chaela Lalana
Jiahe Li
Alice Lin
Julianna Mallette
Madison McClung
Kayla McKnight
Samantha McQueston
Lydia Mekonnen
Tristan Melton
Krystal Merrill
Victoria Morris
Alisha Muscatwala
Carissa Myers
Dominic Nguyen
Chidalu Ogbuka
Leslie Okeke
Briana Outlaw
Akiera Palm
Akshar Patel
Amelia Payne
Ivey Pearson
Noah Pierzchajlo
Emily Reger
Logan Ruchti
Matheus Sartorato
Sarah Schantz
Christopher Shaw
Noah Shepard
Lindsey Smith
Bailie Sorah
Emily Summers
Mark Swain
Anthony Vandieren
Kristin West
Kendall Wilmot
Justin Wolozin
Kidus Yared
Eduardo Zamora

Graduates:

MS Poultry Science:

Shravani Veluri
Mary E. Cope

PHD Poultry Science:

Po-Yun Teng
Jinquan Wang

Save the Date:

June 8th Georgia Poultry Federation Legacy Golf Tournament

August 18th First Day of Class

August 28th Georgia Poultry Federation's "Poultry Strong" Event

September 28th Georgia Poultry Federation Sporting Clays Classic

October 15th Department of Poultry Science Alumni Homecoming Tailgate

November 12th Department of Poultry Science Open House Event

All events are contengent upon COVID-19 and University regulation. Details are subject to change.