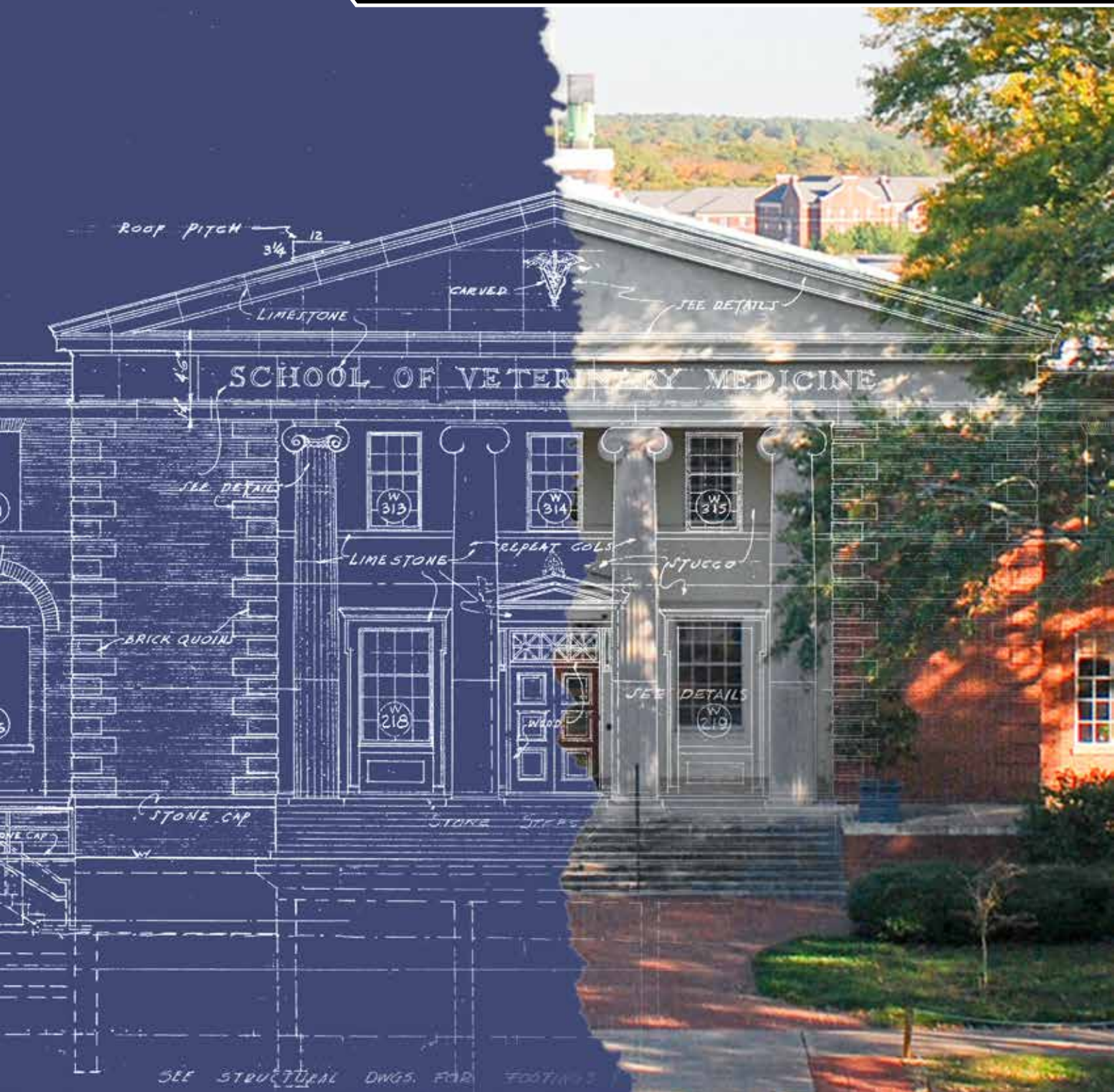




# AESCULAPIAN



SAVE THE BEES



KIDS, CATS, & KIDNEYS



COVID RESEARCH



## FROM THE DEAN

If you're like me, you've spent time in the Age of COVID-19 working harder than ever just to make people feel normal and safe from infection and fiscal harm. It's been a frenetic and stressful time filled with ups and downs, but in my more reflective moments, I am filled with gratitude for all the good things that I have experienced despite the tragic circumstances of the pandemic. I have been amazed by the generosity and nobility of my coworkers who've stepped up to help lighten the load for others and make necessary things happen despite great adversity. I am thankful for our faculty and staff who cared for their patients and students—and made us and the university safer—while juggling family concerns. And I am grateful for the College's leadership team who have given selflessly of themselves to ensure that the people they serve have a voice at the table.

Personally, I am grateful that through this time that I have shared more meals with my family, renewed old friendships, and exercised more (I'm sure that I've walked to California and back). During these long walks—every day for seven months now and counting—I've reveled in Georgia's beauty, grateful that I could return home again after spending a career out of state. I have taken time to listen to the buzz of insects and the cheerful song of birds, and I've let the sweet floral scents heavy in the humid Georgia air transport me back to simpler times when all seemed right with the world.

During these long seven months, I've also found time to reflect on where we are as a CVM. I am truly grateful that we've successfully completed COE accreditation; kept our people safe and secure at work in the middle of a pandemic; provided human COVID-19 testing to our communities, while performing a full load of veterinary diagnostic services; and have been on duty when our clients and referring veterinarians needed us. I am grateful our team has continued moving forward on our strategic priorities: expanding our class size, improving our teaching and service facilities, and blowing past previous college research records.

I hope as you read about some of these accomplishments in this issue of the *Aesculapian* that you, our alumni and friends, will share my pride in UGA CVM. Through these tough times, each and every faculty and staff member has acted with grace, professionalism, and dedication in the face of adversity. And as the days continue to roll forward, I promise you that we will continue to adapt, adjust, and innovate in an effort to make you as proud of us as we are of you! So, my fellow alumni, read on to learn about what we've been up to in the Age of COVID-19. We hope you enjoy this issue!

Dean Lisa K. Nolan



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### CVM establishes Office of Diversity, appoints interim assistant dean

**THE CVM'S DIVERSITY IN MISSION**—teaching, service, and research—has brought a multicultural group of faculty, staff, and students to the College. In order to further develop a culture of equity and inclusion, and as a part of the CVM's strategic plan, the College established an Office of Diversity, Equity, and Inclusion this fall, to be led by a newly appointed assistant dean for diversity, equity, and inclusion.

Previously, diversity and inclusion programming for the DVM program was developed by a diversity committee and diversity coordinator. Going forward, the Office of Diversity, Equity, Diversity, and Inclusion will lead strategic initiatives for the entire CVM, including development and education on diversity for faculty and staff, student programming and recruitment initiatives, and generally building a culture of multiculturalism within all parts of the College. It will be housed within the CVM Office of

Research and Graduate and Faculty Affairs and work in coordination with the Office of Academic Affairs and the Office of the Dean.

"This is an important step for this College," said Dean Nolan. "Diversity and inclusion are not only a strategic priority for the university but one that is of utmost importance to us in the veterinary medicine profession."

Dr. Susan M. Williams will head the office, serving as interim assistant dean of diversity, equity, and inclusion. Williams has been on the UGA CVM faculty in the Department of Population Health for 18 years. Originally from California, she received her BS degree in Zoology and a minor in African American studies from the University of California, Davis. She received her DVM from Tuskegee University and PhD in Veterinary Pathology from Michigan State University. She recently finished the UGA Certificate in Diversity and Inclusion.

## CVM faculty member named 2020 Meigs Professor



**PULIYUR MOHANKUMAR**, professor of veterinary biosciences and diagnostic imaging, was named a 2020 Meigs Professor. A student-favorite, Dr. MK is best known for leading our first-year students through their first anatomy course with encouragement and innovative approaches. To help students master and develop a passion for the work, he has authored four interactive books covering concepts of anatomy that are often difficult to envision and has created over 200 videos of anatomy dissection. He has received numerous awards, including the David Tyler Award for Innovations in Teaching, the Zoetis Distinguished Veterinary Teacher Award, and the A.M. Mills Award for Outstanding Contributions to Veterinary Medicine. He also has been selected for this year's Creative Teaching Award, which recognizes UGA faculty for excellence in developing and implementing creative teaching that extends beyond the classroom.

## Changes in the Office of Research and Faculty and Graduate Affairs



**Dr. Susan M. Williams**  
has been appointed interim assistant dean of diversity, equity, and inclusion.

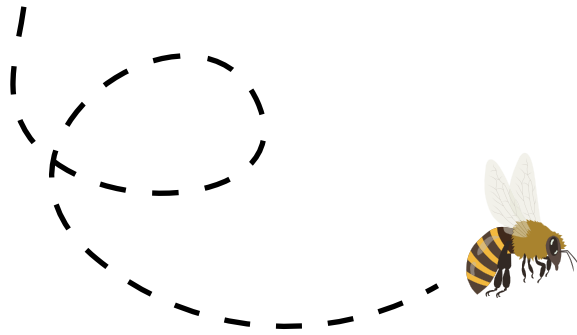


**Dr. Catherine Logue**  
has been appointed as the assistant dean for faculty affairs and advancement.



**Dr. Robert Gogal**  
has been appointed director of the Georgia Veterinary Scholars Program (GVSP).





# SAVING THE BEEES

by Alec Lee

ALL PHOTOS BY DOROTHY KOZLOWSKI





**SCIENTISTS HAVE LONG KNOWN TWO FACTS** about the world's bee population: pollinating bees are vital contributors to healthy crops and a thriving ecosystem, and many bee species are under threat of extinction from pollution, disease and other factors.

The CVM has joined the fight to save the bees by building a set of hives on campus. The new program will give residents and senior veterinary students in clinical training experience caring for these insects and is led by Dr. Jörg Mayer, associate professor of zoological medicine.

The addition of bees cements the college's residency program as the first and only in the country to offer a such a wide spectrum of training, from invertebrate to megavertebrate care—creatures ranging from bees to whales.

In the past, it was up to the hobbyist or commercial beekeeper to maintain the health of their bees, but as the risk of antimicrobial resistance increases around the world, veterinarians have been asked to step in for diagnosis and treatment. In January 2017, the Food and Drug Administration put a halt to individuals purchasing antimicrobials for the treatment of bee colonies.

The average veterinarian does not receive much if any education in the care of bees, and beekeepers have limited relationships with veterinarians. Mayer's goal is to ensure that the next generation of UGA veterinarians are capable of supporting these important pollinators as well as the honey industry, which is big business. The 2.67 million bee colonies recorded by the U.S. Department of Agriculture in January 2019 are reported to be worth about \$17 billion per year.

Farmers also rely on bees for successful harvests. "The next time you go shopping or you are having a dinner, think that bees are directly responsible for the production of about 30% of all food we consume," Mayer said. "Some agricultural industries, like the almond farmers in California, rely up to 100% on bee pollination."

Dr. Gregory Walth, a current zoological medicine resident, had prior experience with beekeeping and sees great value in the developing program. "As an undergraduate, I developed a keen interest in entomology and nearly pursued this field as a career. As I became more interested in infectious diseases and medical treatment of animals, I gravitated to the veterinary profession," he said. "Now that I am able to approach these insects from a medical viewpoint, I have found an intriguing overlap in my interests."

But some students will be handling bees for the first time. Amanda Wonn, a fourth-year DVM student, was in the first group to handle the bees. She found the experience enjoyable and feels more confident in her approach to care for bees in the future. "I feel that the knowledge of general beekeeping and basic veterinary care is a very important and necessary part of our education, as we will be the ones who are responsible for the medical care of the hives," she said.

Mayer has also formed a Vet Bee Club for CVM students interested



in learning more about bees and the role veterinarians can play in their care. With hopes to see the club grow, he has partnered with Keith Delaplane, professor of entomology and director of the UGA Honey Bee Program, to apply for a grant to build eight more hives in various locations, allowing more students access to the bees.

Students in the club will also be allowed to sit for the UGA Master Beekeeper certification exam and will be able to attend meetings with and view the colonies of local beekeepers' associations. Relationships with local associations are extremely important as veterinarians take on more responsibility for the health of these animals.

"Dr. Mayer has provided us with great information on bees and bee care," said Amanda Saulnier, a second-year DVM student participant. Due to the pandemic, she has been unable to handle them in person, but there have been a few Zoom calls where students shared and discussed what they've learned. "Many of us have gained a greater appreciation for how complex bees are as a hive."

"Bees are an important part of the economy in Georgia, and the beekeepers know them best," Mayer said. "Beekeeping is unique to its location. What works in Massachusetts does not necessarily work in Georgia, and these associations are the best resource veterinarians have for this knowledge."

Many students have never worked with bees. "It has been great to see that switch flip," said Mayer. "Initially, there is some fear. But then curiosity takes over, and that has been very rewarding."

In the future, Mayer would like to see beekeeping find a place in the curriculum of all UGA veterinarians. "With access to the Honey Bee Program and a wealth of local knowledge, our students will be prepared to treat bee colonies exactly as they would any other animal."



## Changes to Athens DLab leadership

After 15 years, Athens Veterinary Diagnostic Lab (AVDL) Director Jerry Saliki has retired, and a new director to the lab has been hired and will join the team in January, 2021. Dr. Saliki joined the University of Georgia faculty as a professor of virology in 2005 and was named the director of the AVDL in 2007. He is a renowned virologist who, since 1984, has dedicated his professional life to serving the needs of people and animals through research, diagnostics, and public service.

As director, Saliki oversaw the steady growth and modernization of the lab while expanding the scope of its activities to include niche services such as laboratory animal and marine mammal diagnostics. He is a highly accomplished virologist with over 125 scientific publications who served 11 years as the editor-in-chief of the *Journal of Veterinary Diagnostic Investigation*, the official publication of the American Association of Veterinary Laboratory Diagnosticians (AAVLD). His many awards and accolades include Practitioner to Faculty award (Oklahoma Veterinary Medical Association, 1997), Pfizer award for research excellence (Oklahoma State University, 2003), Charles Dobbins award for excellence in service (UGA, 2010), distinguished service award (AAVLD, 2013), life membership award (AAVLD, 2014), and EP Pope Memorial award (AAVLD, 2015).

Dr. Saliki regularly advocated for the needs of the laboratory and all its stakeholders, meeting with government officials at the state and national level, with a focus on positioning the laboratory to adequately fulfill its disease diagnostic and surveillance missions to the state and nation.

Filling Saliki's enormous shoes will be Dr. Binu Velayudhan who currently serves as the assistant director of laboratories at the North



*Dr. Saliki*



*Dr. Velayudhan*

Carolina Veterinary Diagnostic Laboratories in Raleigh, NC. Prior to his move to North Carolina, he was the head of multiple sections at the Texas A&M Veterinary Diagnostic Laboratory.

Active in research, Velayudhan has authored or co-authored over 20 publications. His research interests include the development and evaluation of conventional and molecular diagnostic tools for the detection of viruses and bacteria of significance to human and animal health as well as vaccines, challenge models, and host-pathogen interactions.

"We are looking forward to Dr. Velayudhan joining the CVM in January," said Jesse Hostetter, executive director of the Athens Veterinary Diagnostic Laboratory and head of the department of pathology at the CVM. "He brings a wealth of lab management and diagnostic testing experience with him that will be an asset to our lab here in Athens. He will build on our current successes through his energy, enthusiasm, and leadership skills. Dr. Velayudhan has a strong background working with companion animal and agricultural stakeholders and is dedicated to maintaining and growing our service to Georgia animal health."

Velayudhan holds a Bachelor of Veterinary Science and Animal Husbandry and a master's degree in Veterinary Microbiology from Kerala Agricultural University, Kerala, India, a PhD in veterinary medicine/infectious diseases with a specialty in veterinary virology from the University of Minnesota, and an MBA from Texas Tech University. He is also a diplomate of the American College of Veterinary Microbiologists with a specialty in virology.





# Dr. Hugh D. Dookwah

1949–2020

**DR. HUGH D. DOOKWAH** of Athens-Clarke County passed away peacefully in his home on July 23, 2020 at the age of 70.

Hugh was born August 24, 1949, in Georgetown, Guyana, to the late Randolph Dookwah and Geraldine Anderson. He spent much of his childhood reading and enjoying Spaghetti Westerns with his mother while learning biology from his father. Hugh proved to be an exceptional student by earning entry into Queen's College at the age of 14. He began his teaching career in Biology at Tutorial College in 1967. In 1976, he was awarded a scholarship to attend Tuskegee University in Alabama. He went on to earn a Doctorate in Veterinary Medicine in 1982 from Tuskegee University and a PhD in 1993 from Texas A&M in College Station, Texas.

Hugh was passionate about science and teaching. He conducted research and held teaching positions at Tuskegee University College of Veterinary Medicine, Texas A&M College of Veterinary Medicine, and the Department of Anatomy and Physiology at Athens Technical College. He was a Senior Lecturer with the Department of Veterinary Biosciences and Diagnostic Imaging at the University of Georgia College of Veterinary Medicine at the time of his death.

Hugh's family had always been a source of pride and comfort. In May of 1972, Hugh and Joycelyn Marshall married after a three-year courtship. Together, they had three children: Sean Dookwah, Jeanette Amanda Dookwah, and Michelle Dookwah-Smith. He delighted in fatherhood and was deeply engaged in each of his children's lives and hobbies. He instilled in each of them a love of movies, reading, science, and nature. He and Joycelyn joyfully celebrated 48 years of marriage in May 2020.

Hugh was predeceased by his son, Sean (42), and his brother Keith (70). He is survived by his wife Joycelyn; daughters Jeanette Amanda and Michelle; brother Eon; and sisters Cleo, Arlene, and Allison.



CHRISTOPHER B. HERRON

## Exploring news ways to teach and learn

**THE COLLEGE OF VETERINARY MEDICINE** is a busy place with many moving parts. Our teaching hospital is not just a hands-on classroom for clinical students, but a medical service for our community. Our clinical faculty members provide guidance for students and care for our patients. At the same time, many of them are also researchers seeking answers to the health-related questions plaguing humans and animals alike. Woven through it all is the mission to educate the next generation of veterinarians year after year, and occasionally, these threads all intersect.

Learning surgical skills is a difficult task. Surgeons must be observant of both their surroundings and their patients—but they must also simply know how a specific procedure feels. The responsibility for teaching these skills falls to our faculty; it creates a drive that pushes these educators and clinicians to constantly evaluate, adapt, and improve teaching methods in an ever-evolving environment. In a recent study, aptly titled “*Evaluation of surgical models for training veterinary students to perform enterotomies*” published in *Veterinary Surgery*, faculty compared interactions and reactions to both synthetic and genuine surgical models as students learned the skills necessary for performing an enterotomy.

Where no model is an exact replica of the genuine procedure, both students and faculty agreed that each model has its place in replicating

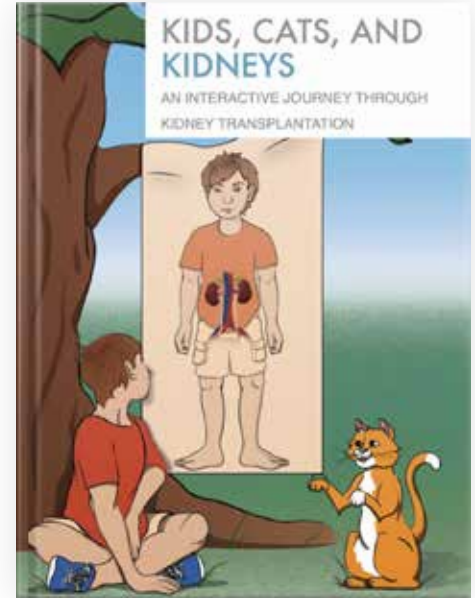
the look and feel of a live surgery—and authentic intestinal tissues were preferred overall. “It is important that we take the time to perform studies like this,” says Janet Grimes, assistant professor of small animal surgery. “Studies like this give us insight into our methods and how they can be improved. Our goal is to provide our students with the best education and experience possible.”

Thomas Bevelock was a second-year DVM student when this study began. Taking part allowed him to begin practicing these skills earlier in his curriculum than was customary and gave him the fortuitous opportunity to work with all the teaching models available. During his fourth year of training, Thomas had the opportunity to aid in performing this exact procedure on a faculty-owned cat. “Personally, I believe I was more prepared for assisting with the surgery because of my prior practice with the models,” explains Dr. Bevelock.

Bevelock has since graduated and is an intern at the University of Missouri. In the future, he will undoubtedly perform countless enterotomies and other surgeries. But his experience in both this study and in actual practice has left him feeling better prepared for life as a veterinarian. He concludes, “investigation should be done prior to implementing learning tools on future medical professionals, as it can make all the difference in our training, and thus, the well-being of our future patients.”



## Kids, Cats, and Kidneys



**CHAD SCHMIEDT**, professor of small animal medicine and surgery and Alison Bradbury Chair in Feline Health, in collaboration with Jim Moore, professor of large animal medicine and director of the Educational Resources Center at the College of Veterinary Medicine, has created and published an eBook written for children preparing to undergo a kidney transplant.

The eBook, *Kids, Cats, and Kidneys*, is about a young boy who will soon undergo the procedure and has quite a few questions and worries. He is guided through the process by a friendly cat who has already received a kidney transplant. Together, they learn about the

procedure, the care team, and what life looks like after the transplant is complete.

The book was illustrated by Katelyn Snell and funded by a grateful donor whose cat passed away before receiving a kidney transplant. The book was written by fourth-year DVM student Alexia Schaeffer. In order to meet the needs of these children, the team consulted with pediatric medical psychologists—ensuring the content is understandable and answers the right questions. The book was developed for Apple Books by Educational Resources.



### Brainard receives ACVECC award

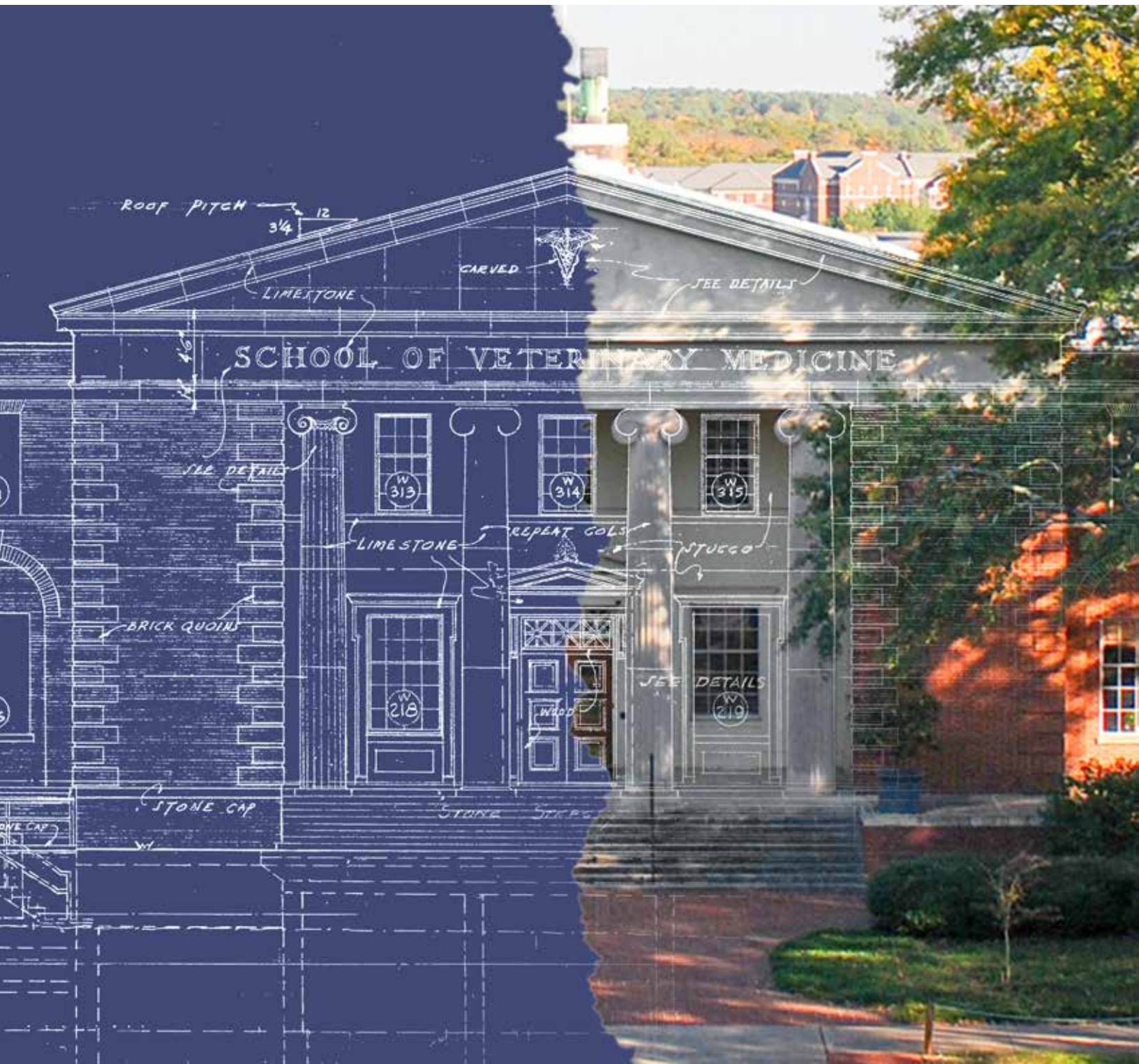
**BENJAMIN BRAINARD**, professor of small animal medicine and surgery and director of clinical research, was recently awarded the 2020 ACVECC Jack Mara Scientific Achievement Award for Advances in Coagulation.

This award is presented to the veterinarian who has made the most substantial contribution to knowledge and understanding of the unique topic selected for each award year. It is awarded in memory and honor of Dr. Jack Mara, a distinguished veterinarian and scientist who was a staunch advocate of veterinary emergency and critical care as well as postgraduate education.

Brainard has served two terms as the vice president of the ACVECC and acts as associate editor of the Journal of Veterinary Emergency and Critical Care. Documentation of novel anticoagulant, procoagulant, and antiplatelet drugs have been the focus of his research—with a special interest in benefiting patients in need of critical care.

# SOLID past. **BRIGHT** future.

*by Lisa Herrmann*







**FOUNDED IN 1785**, the University of Georgia is considered the Birthplace of Public Higher Education, but the University's constituent colleges have changed and developed as the centuries have passed. With humble beginnings as part of the College of Agriculture in 1918, the College of Veterinary Medicine was only founded in 1946. Yet, despite its young age relative to other veterinary teaching institutions in the country, the College has seen significant change and accomplishments in its 74 years. Our three-pronged mission of teaching, research, and service has guided us along the way and has given us a strong foundation on which to build a bright future. And while 2020 will go down in the history books as a challenging year for the CVM (and the world), it has certainly highlighted the tenacity and motivation within these walls.

## Humble Beginnings in Tifton

One often overlooked aspect of CVM history is found down in Tifton, GA. More and more people are learning about the great things happening on the Tifton campus, but few know that they've actually been around longer than the College itself. In 2020, the Tifton Diagnostic and Investigational Laboratory celebrates 75 years of service.

The lab was established in 1945 as part of the Georgia Coastal Plain Experiment Station, located in three rooms of the Experiment Station's basement. It was staffed by only three

people—the director, Dr. W.L. Sippel, and two assistants—who processed approximately 2,000 test requests annually during the first few years. Their mission was two-fold: provide diagnostic service to veterinarians and conduct research on diseases of animals which were of economic importance to the livestock industry.

One such disease was hog cholera. Devastating for Georgia hog farmers, this disease was probably the main reason the lab in Tifton moved out of the basement and into its own building. In 1951, Governor Herman Talmadge approved \$50,000 as part of a special appropriation to build a new building for the Animal Disease Department, as it was then called. Three years later, because of the critical research the group was conducting, an isolation building was constructed adjacent to the lab building. Patterned after buildings at the Rockefeller Institute for Medical Research, its advances were unmatched anywhere in the South; though, perhaps, its most-discussed feature was that it had air conditioning—technology unheard of in Tifton in 1954.

## The Tifton Campus Grows

Once in their new facility, the team studied bacterial, viral, and parasitic infections in animals much as they do today. In that isolation building, the research that led to the first reports of fungal toxicity occurred. 15 years later, the lab moved into a new 15,000-square-foot space—a building the group still occupies



today. Around that same time (in 1968), the lab was administratively transferred to the College of Veterinary Medicine and was re-named the Veterinary Diagnostic and Investigational Laboratory.

Since the late '60s, the lab has continued to grow and adapt to Georgia's agricultural needs, adding new procedures, equipment, and expertise needed to meet the lab's mission and assist area veterinarians. In fact, the caseload has experienced steady growth over the years—from 2,000 test requests in the late '40s to 16,000 in 1980, and 60,000 today.

## Standing Strong in Strange Times

Now, some 75 years after its doors first opened, the lab continues to evolve. From humble beginnings in a basement to 2020 when the COVID-19 pandemic has pushed the lab (and the College) unlike anything ever before. As the world shut down in March, the CVM and the Lab got busier. Classes went online in a matter of weeks, researchers transitioned their focus of study to tackling the virus, and the teaching hospital—a facility celebrating five years on College Station in 2020—found ways to continue safely seeing patients. The pandemic also led the Diagnostic Labs in Athens and Tifton to enter uncharted waters—analyzing tests on human samples. To support the state's COVID-19 testing efforts, the labs obtained CLIA certification allowing them to test human samples. Since then, the Athens Diagnostic Lab and the College's VetView Software Team have been instrumental in providing COVID-19 surveillance testing to support the safe reopening of the University of Georgia. In Tifton, the Diagnostic Lab is supporting area hospitals by running tests in an expedited manner, cutting down wait times for results to same-day service in over 95% of cases. In its first three months of COVID-19 testing, the Tifton lab has already offered over 10,000 COVID-19 PCR tests to support the

operations of over 5 hospitals and clinics serving South Georgia communities, all while continuing their service to the state's animal agricultural industries. This is truly One Health in action as the Athens and Tifton diagnostic labs step up to support both human and animal disease diagnostics.

## Overcoming Obstacles

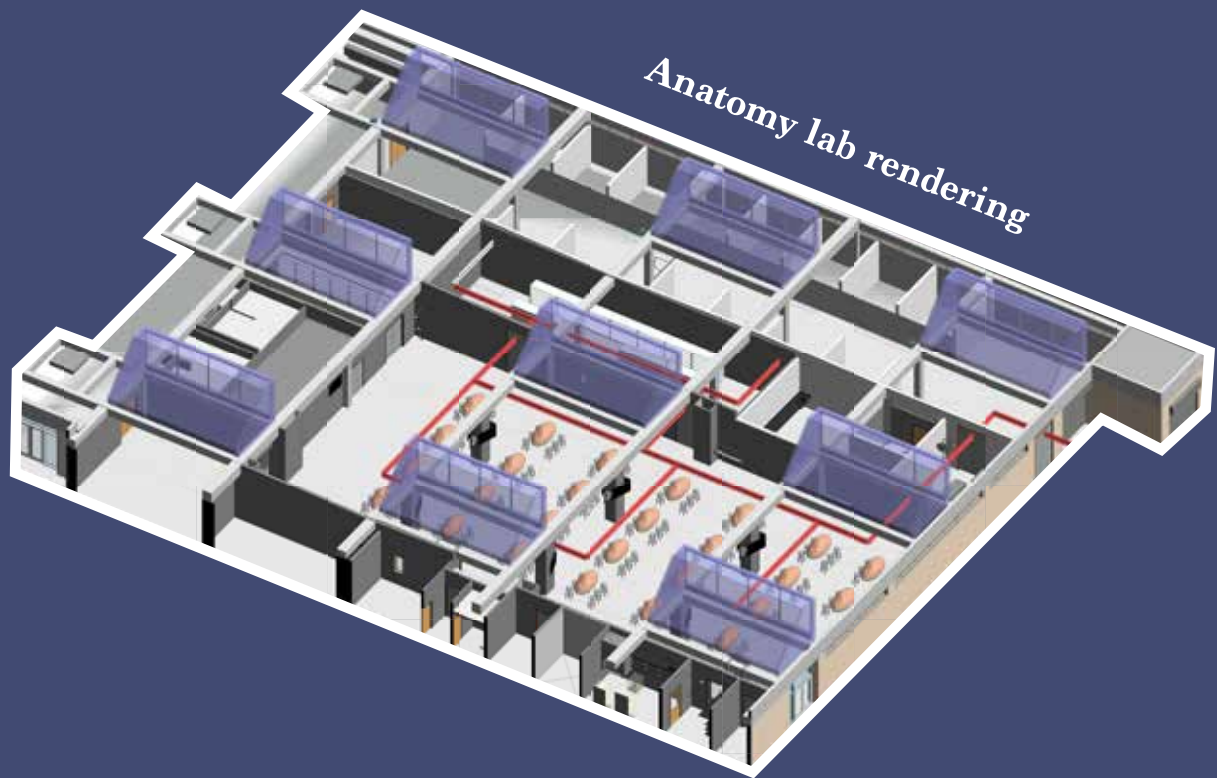
Despite the ongoing challenges presented by the pandemic, our College and Diagnostic Labs are forging ahead, dedicated to continuing to provide the best education for our students, top-notch care for our patients, state-of-the-art clinical and diagnostic service to the state and region, and ongoing research that will make an impact on the world.

A veterinary diagnostic lab processing human samples—this is just one way the pandemic has pushed the CVM into the future. Other plans continue to move forward, but their implementation has been accelerated and/or tweaked and improved because of challenges presented by the pandemic. For one, we are continuing to increase our class size to meet the state's growing needs for veterinary care. This year, our class size went from 114 DVM students to 125, one year earlier than planned because of innovative teaching approaches put into action because of COVID-19. Next year, as our new Anatomy Teaching Lab comes online, we will increase even more, bringing our class size to 150 per year.

Because of social distancing guidelines and occupancy restrictions, faculty and administration have had to be creative. Virtual reality was in the CVM's future, but it became a reality this semester. First-year students, divided into three sections for anatomy class, are spending part of their semester in our makeshift VR lab (AKA the Reading Room), learning animal anatomy using this burgeoning technology. A huge help through a difficult semester, these capabilities will expand in the coming years.







*Anatomy lab rendering*

Flexibility and adaptability have been paramount for the CVM in these challenging times. We've learned to take what we have and make things work, sometimes far sooner than we had planned. That's been the story of the past eight months. But all in all, having to pivot and think of new solutions and rethink old ways of doing things has better prepared us for the future.

## Eyes Set on the Future

The pandemic couldn't stop our anatomy lab project from moving forward. Construction began in October 2020 with expected occupancy slated for August 2021. This space will allow for enormous improvements in how we teach these foundational courses for our DVM students.

Likewise, we're moving forward with the development of a clinical skills laboratory, which will allow our students increased hands-on training opportunities. After all, practice makes perfect as students prepare

to join the real world of veterinary practice. The College is also committed to ensuring that the next generation of high school and undergraduate students from underserved and underrepresented communities is exposed to the varied and exciting career opportunities in veterinary medicine. Made possible through UGA's Diversity and Inclusion New Approaches Grants as well as grant funding from USDA-National Institute of Food and Agriculture, these programs will help ensure that Georgia continues to be served well by veterinarians.

The College is examining ways to expand our laboratory and research animal spaces with the strategic goals of increasing our research productivity and capabilities over the next five to ten years. As for serving the state, the Tifton campus broke ground on a new facility on August 28, 2019, that will increase our ability to serve South Georgia agriculture. The Tifton Livestock Veterinary Medical & Education Center will open its initial phase as 2020 concludes. This new facility will include large animal examination spaces, allowing producers in the area to

bring their animals to us for treatment. Down the road, as funding allows, it will be expanded to include classroom space that could be used for continuing education events, providing increased service to this vital area of the state. How's that for a 75th birthday present?

Things certainly have changed since 1945, when the Tifton diagnostic lab was founded. What hasn't changed is the lab and its home College's devotion to service. Whether pandemic or not, we are determined to be among the best in veterinary education, research, and service. From three people in a basement to gleaming new facilities and the latest technologies, the UGA CVM is rooted in tradition and history but is facing a bright future!

## Mitigating fescue toxicity with USDA grant

by Maria Lameiras and Alec Lee

A **\$500,000 GRANT** from the U.S. Department of Agriculture will allow researchers at the University of Georgia to examine the minutiae of cattle and fescue microbiome interaction to find targets that will help mitigate the effects of fescue toxicosis, a forage-related condition that costs the U.S. beef industry more than \$1 billion each year.

Fescue toxicosis, which has long been a problem for U.S. and South American cattle producers, can cause reduced weight gain, digestive and reproductive problems including reduced calving rates, as well as foot and leg problems in cattle.

The grant project, funded by the USDA's National Institute of Food and Agriculture, is being led by College of Veterinary Medicine Professor Nikolay Filipov in collaboration with College of Agricultural and Environmental Sciences Associate Professor Todd Callaway of the Department of Animal and Dairy Science and Professor Nicholas Hill of the Department of Crop and Soil Sciences, in partnership with Associate Professor Garrett Suen of the University of Wisconsin and Professor Dean Jones of Emory University.

"Various approaches have been attempted to mitigate it. What we are trying to do is characterize the disease—which is very complex—globally," said Filipov, a member of the Department of Physiology and Pharmacology in the College of Veterinary Medicine. "We are looking at multiple levels of the gut microbiome of cattle to see how they metabolize all of the different molecules of fescue to characterize those and, more importantly, how those interact with the bacteria that are part of the cattle's GI tract. The overall idea is that we may be able to come up with more specific ideas of types of management strategies or treatment approaches for the disease that can't be found with more simplistic approaches."

Georgia is located in what is referred to as the "Fescue Belt"—a 1,000-mile long, 400-mile deep swath of the U.S. that is home to about 25% of the nation's beef cows. In this region, fescue is the most widely used forage grass because it is easy to establish, has a high drought tolerance, and has a long grazing season. However, fescue contains an endophyte—a fungus that lives within the plant—

that gives the grass desirable attributes but produces alkaloids that are toxic to animals who graze on it, a defense mechanism meant to prevent overgrazing. While endophyte strains that do not produce toxic alkaloids have been identified, it is not feasible to completely remove the toxic endophyte-containing grasses from the environment, and current management practices have had limited success in managing fescue toxicosis, Filipov said.

"We would like to come up with a solution based on whole-animal and animal-plant-endophyte approaches, so we can manipulate the many things that contribute to fescue toxicity, both on the plant side and the animal side," he said.

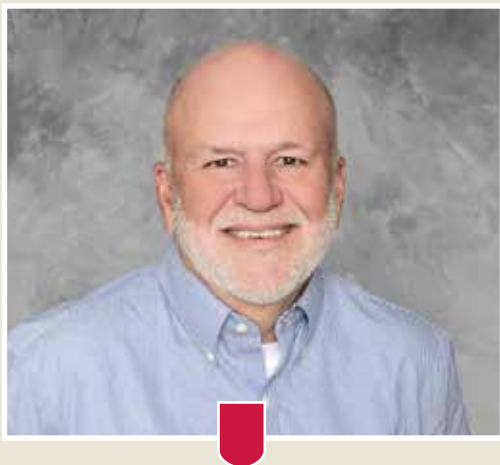
Field research will be performed at the J. Phil Campbell Sr. Research and Education Center in Watkinsville, Georgia, where the personnel under the leadership of superintendent Eric Elsner have been very supportive and accommodating for this fescue toxicosis research team.

"The idea is to determine what the toxic endophyte causes in terms of changing the composition of the grass, and we will measure the bacteria and fungi that are present and the metabolites produced when cattle ingest it," Filipov said.

Suen, a microbiologist, and Callaway, a microbiologist and animal nutrition expert, will examine the gut microbiota of cattle used in the study to understand the effect of microbe-host interactions caused by the alkaloids.

"The metabolome is a combination of what the microbiome does to feedstuffs and what the animal does to feedstuffs along with the end products of the microbial fermentation. We don't know if there is a population in the gut that can detoxify these chemicals or turn it into something that can be used for growth while mitigating the detrimental effects. We don't know what to look for yet, but that is the puzzle of the microbiome and the purpose of this research," Callaway said.





## Edwards named president of AAALAC International council on accreditation

**GAYLEN EDWARDS**, head of the department of physiology and pharmacology and Georgia Athletic Association Professor in Veterinary Medicine, has been elected president of the AAALAC International Council on Accreditation.

AAALAC International is a non-profit organization that promotes the humane treatment of laboratory animals. The organization also offers a voluntary assessment and accreditation program. These assessments are vital to organizations ranging from large universities like the University of Georgia to small contract-research organizations seeking to promote confidence in their animal care programs and procure funding. As the president of the Council on Accreditation, Dr. Edwards will oversee all council meetings and communicate with programs seeking accreditation. These duties are performed alongside his own site visits for the organization among other responsibilities with the College as well as the UGA Institutional Animal Care and Use Committee (IACUC).

Dr. Edwards has worked with AAALAC since 2006 and has been on the council since 2011. Prior to this election, he held the vice president seat for 18 months. He has also been the Chair of the UGA IACUC for over 20 years. This committee has oversight of animal care and use in research at the University of Georgia.

## Great apes project wins award

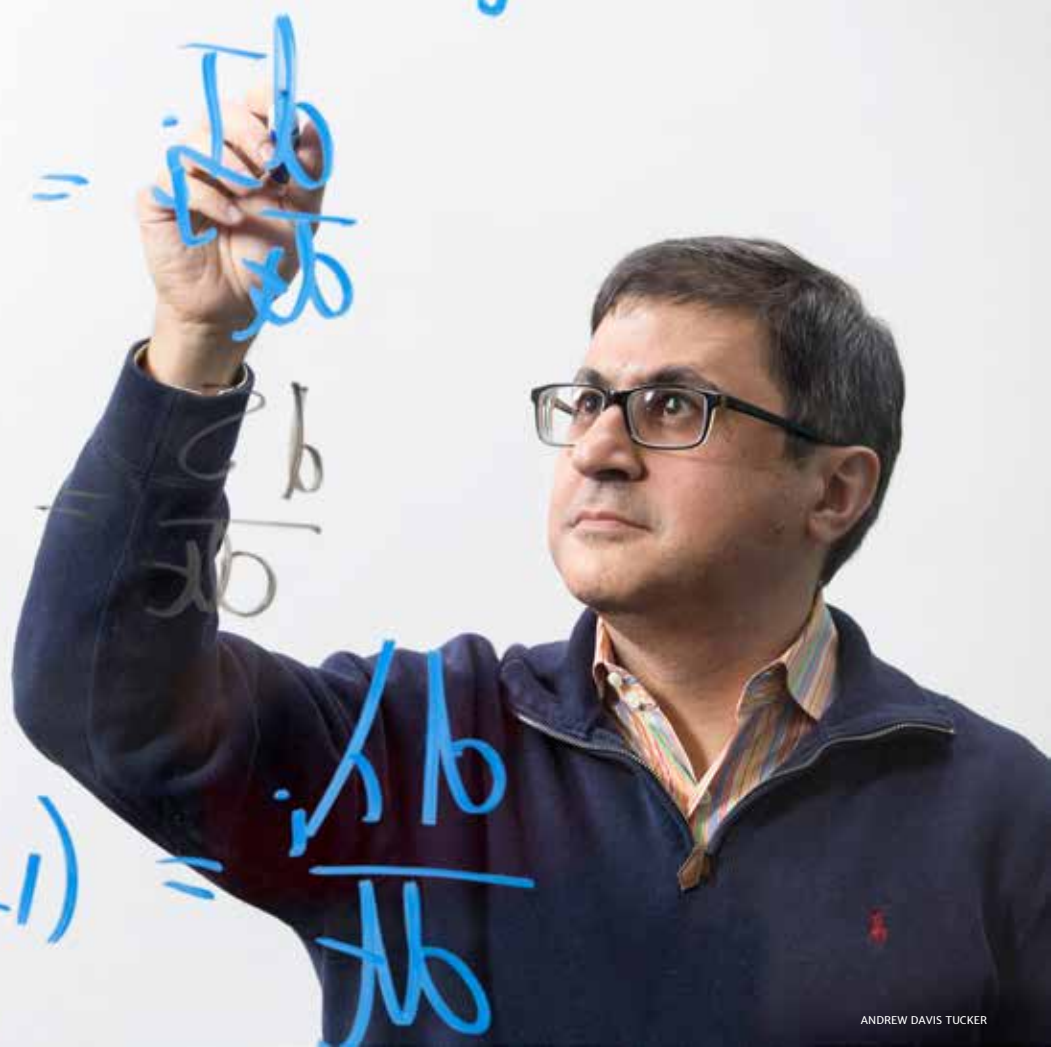
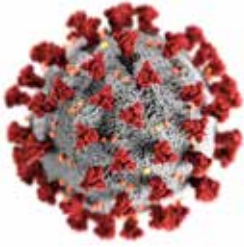
CUTTING EDGE



**THE GREAT APE HEART PROJECT** based at Zoo Atlanta has received the prestigious 2020 Research Award with Top Honors from the Association of Zoos and Aquariums (AZA). The award recognizes achievements in advancing scientific research among accredited zoos and aquariums throughout the US. Several faculty from the UGA CVM, including Dr. Rita McManamon who is still instrumental in the project, have been involved in various stages, which is the world's first coordinated clinical approach targeting cardiovascular disease in all four non-human great ape taxa—gorillas, orangutans, chimpanzees, and bonobos—living in zoological environments. The disease is a primary cause of mortality among great apes in zoos but, until recently, had been a poorly understood area of zoological veterinary care. Its examination requires advanced understanding of diagnosis, treatment, and monitoring of affected individuals, as well as adaptation of techniques already in use in humans and domestic animals.

PHOTOS BY ADAM K THOMPSON/ZOO ATLANTA

# COVID Research



ANDREW DAVIS TUCKER

## THE SEARCH FOR HERD IMMUNITY

**ACHIEVING HERD IMMUNITY TO COVID-19** is an impractical public health strategy, according to a new model developed by University of Georgia scientists. The study recently appeared in Proceedings of the National Academy of Sciences.

Controlling COVID-19 has presented public health policymakers with a conundrum: how to prevent overwhelming their health care infrastructure, while avoiding major societal disruption. Debate has revolved around two proposed strategies. One school of thought aims for “suppression,” eliminating transmission in communities through drastic social distancing measures, while another strategy is “mitigation,” aiming to achieve herd immunity by permitting the infection of a sufficiently large proportion of the population while not exceeding health care capacity.

“The herd immunity concept is tantalizing because it spells the end of the threat of COVID-19,” said Toby Brett, a postdoctoral associate at the Odum School of Ecology and the study’s lead author. “However, because this approach aims to avoid disease elimination, it would need a constant adjustment of lockdown measures to ensure enough—but not too many—people are being infected at a particular point in time. Because of these challenges, the herd immunity strategy is actually more like attempting to walk a barely visible tightrope.”

This study, carried out by Brett and Pejman Rohani, UGA Athletic Association Professor of Ecology and Infectious Diseases, at the University of Georgia Center for the Ecology of Infectious Diseases, investigates the suppression and mitigation approaches for controlling the spread of SARS-CoV-2, the virus that causes COVID-19.

While recent studies have explored the impacts of both suppression and mitigation strategies in several countries, Brett and Rohani sought to determine if and how countries could achieve herd immunity without overburdening the health care system, and to define the control efforts that would be required to do so.

They developed an age-stratified disease transmission model to simulate SARS-CoV-2 transmission in the United Kingdom, with spread controlled by the self-isolation of symptomatic individuals and various levels of social distancing.

Their simulations found that in the absence of any control measures, the U.K. would experience as many as 410,000 deaths related to COVID-19, with 350,000 of those being from individuals aged 60-plus.



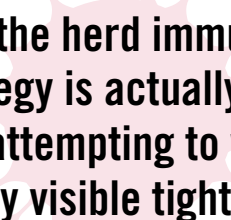
They found that using the suppression strategy, far fewer fatalities were predicted: 62,000 among individuals aged 60-plus and 43,000 among individuals under 60.

If self-isolation engagement is high (defined as at least 70% reduction in transmission), suppression can be achieved in two months regardless of social distancing measures, and potentially sooner should school, work, and social gathering places close.

When examining strategies that seek to build herd immunity through mitigation, their model found that if social distancing is maintained at a fixed level, hospital capacity would need to greatly increase to prevent the health care system from being overwhelmed. To instead achieve herd immunity given currently available hospital resources, the U.K. would need to adjust levels of social distancing in real time to ensure that the number of sick individuals is equal to, but not beyond, hospital capacity. If the virus spreads too quickly, hospitals will be overwhelmed, but if it spreads too slowly, the epidemic will be suppressed without achieving herd immunity.

Brett and Rohani further noted that much is unknown about the nature, duration, and effectiveness of COVID-19 immunity and that their model assumes perfect long-lasting immunity. They cautioned that if immunity is not perfect and there is a significant chance of reinfection, achieving herd immunity through widespread exposure is very unlikely.

“We recognize there remains much for us to learn about COVID-19 transmission and immunity, but believe that such modeling can be invaluable in so-called ‘situational analyses,’” said Rohani. “Models allow stakeholders to think through the consequences of alternative courses of action.”



**“...the herd immunity strategy is actually more like attempting to walk a barely visible tightrope.”**



## UNDERSTANDING POST-COVID INFECTION

**A KEY QUESTION SURROUNDING COVID-19** is if people who have had the virus gain some degree of long-term immunity. Ted Ross is leading a nationwide study to examine this pressing question. Ross is director of the University of Georgia's Center for Vaccines and Immunology and professor of infectious diseases in the College of Veterinary Medicine.

“The body's response to every infection is unique,” explained Ross. “In this study, we hope to determine how the body fights this novel virus and what, if any, protection the body develops following infection.”

The team also hopes to examine immunological, demographic, and medical risk factors and the part they play in recovery and infection outcome. Using blood draws and saliva samples, the researchers will monitor participants over the course of 24 months. The project, called SPARTA (SARS SeroPrevalence and Respiratory Tract Assessment), is funded by the NIH National Institute of Allergy and Infectious Diseases and the National Cancer Institute.

In Athens and Augusta, Georgia, the study will establish and follow participants at higher risk of exposure to the SARS-CoV-2 virus, including local health care and emergency services providers, as well as faculty, staff, and students at UGA. The group will total about 3,000 participants between 18 and 85 years of age and at least 50% of the participants will be members of minority populations, which have been impacted by COVID-19 at a higher rate than other groups.

UGA will participate with other teams of investigators from universities and health care providers around the country including Augusta University Medical Center, Mt. Sinai Medical Center in New York City, University of Chicago, University of Miami, University of Michigan at Ann Arbor, University of California at Los Angeles – Harbor Medical Center, Washington University Medical Center in St. Louis, and St. Jude Children's Research Hospital in Memphis.

The list is expected to grow as more institutions join the project. The data collected from these locations will be aggregated and compared for a nationwide view of immunity and recovery from COVID-19.

# In Development

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A conversation with...

Brandy Burgess

### **Tell us a little about your background. What brought you to UGA?**

I grew up on a farm in western Montana and earned my undergraduate degree in Biological Sciences from Montana State University. Next, I earned a DVM from Colorado State University and then went on to a large animal internal medicine internship and residency at the University of Saskatchewan. I appreciated the challenge of being an internist but was really drawn to infectious disease epidemiology. I was fortunate to have the opportunity to return to Colorado State University for a residency in biosecurity and infection control and a PhD in epidemiology. My first faculty appointment was at Virginia Tech, which I enjoyed very much but found little opportunity to work in infection control. UGA changed that for me... here was an institution that saw the value in infection control. I wanted to be a part of that.

### **What's your favorite thing about being at UGA? What do you think makes this place special?**

For me, what makes UGA special is the people and the campus community. There is no shortage of folks willing to help if needed, whether they be in my college or from across campus, and I have felt included, supported, and valued from day one.

### **What were your days like as an infection control officer pre-COVID? How has that changed in the middle of a pandemic?**

I'm not sure I can remember! Pre-COVID, my days and weeks were a bit more orderly and I could focus on challenges that had a much smaller footprint. Now, while the same principles

apply, the scale and consequences have changed. It's something that weighs on me heavily... ensuring that we are making evidence-based decisions that will keep people safe while continuing to care for our patients. This is not a small task and not something that I take lightly.

### **Did you ever think you'd serve as an infection control officer during a pandemic?**

I'm not sure anybody does unless they are seeking them out. We are generally so far removed from true pandemics, whether it be in time (e.g., flu pandemic of 1918) or geographically (e.g., spillover events in developing countries) that having one show up in our own backyard takes a minute to comprehend.

### **What do you think we've done well? What are our challenges going forward?**

We have adapted to change. One of the hardest things about my job is to move people to modify their behavior. Basically overnight, we have had to do just that. And we did it as a community, which, frankly, is the only reason we have been successful. I think the challenge moving forward is not only one of endurance, but one of continued adaptation as this pandemic unfolds.

# Davis Grayson Kelly

## 1995 - 2020

*Written by Davis's classmates and close friends Claire Childers, Chandler Harbaugh, and Leo Krick*

**DAVIS GRAYSON KELLY** was the son of Kevin and Michelle Kelly, brother of Sarah Taite and Cece Kelly from Birmingham, Alabama. As a rising third-year veterinary student, he valued friendships, puns, and ping-pong. In high school, Davis was an avid member of the cross-country team, where he found his love for veterinary medicine and pursued his undergraduate education at Auburn University. Upon his acceptance to multiple veterinary schools, Davis chose UGA due to the connections he made with colleagues and faculty at Accepted Students Day in 2018. Those friendships only multiplied as he made an impression at the college as the 2022 class president, a devoted Alpha Psi fraternity member, and an invaluable member of over six Intermural Sports teams.

After every exam or during any break in classes, Davis was outside playing four square in front of the CVM columns. He made sure to ask everyone that passed by if they wanted to join, no matter how many times he got rejected. Four square soon grew into eight square. You could always catch him in a brightly colored Hawaiian shirt and a huge smile on Fridays. The class of 2022 continues his tradition of "Hawaiian Fridays" in his honor.

Although Davis prioritized school, he always made an effort to develop deep friendships with nearly everyone he met, both inside and outside the CVM. From being up for any adventure to planning entire trips with his closest friends, Davis always made deep connections with people. Davis was a humble man who valued love, laughter, and true friendships in his service to Jesus Christ above all else.

The Class of 2022 will always miss your infectious smile, witty puns, and your constant love for life. We promise to always "Live like Davis."

We encourage you to please contribute to the Davis Kelly Memorial Giving Scholarship at the URL below:

[gail.uga.edu/daviskelly](http://gail.uga.edu/daviskelly)





# Alumni Notes

► **Dr. Geary R. Smith (DVM '12)** is the technical director of the new comparative medicine core facility at the Children's Hospital of Philadelphia Research Institute. This facility will guide therapies from basic research stages through preclinical testing to investigational new drug approval with the FDA.

► **Dr. Becky Schwiebert, DVM, PhD, DACLAM (DVM '89)** was elected by her peers as a member of the Council on Accreditation for AAALAC International. Dr. Schwiebert currently serves as the attending veterinarian for Baylor College of Medicine in Houston, TX.

► **John Bembry (DVM '77)** has been honored by the Georgia Conservancy as Georgia's Distinguished Conservationist of the Year.

► **Karen Boniface Campbell, BS, DVM (DVM '68)**  
February 21, 1943 - November 15, 2019  
Determined from a young age to be a veterinarian, Karen entered the University of Georgia's School of Veterinary Medicine as one of only three women in the class of 1968.

While at UGA, Karen was dubbed "Sunshine" by long-time vet school faculty member Dr. Eldred Causey and was a founding member of the editorial board of the yearbook. After earning her DVM, Karen went on to practice small animal medicine, doing relief work, and then establishing her own clinic in Maryland, while also managing Her husband's large animal practice. She worked for the Food and Drug Administration for several years during this time.

► **Dr. Aubrey Morgan (DVM '64)**—Aubrey F. Morgan, DVM, 83, passed away peacefully in the morning of August 23rd. He built his Veterinary Hospital in Chesapeake, VA, and opened Actin Animal Hospital in 1968. He was highly regarded for his compassion for the animals and their owners. He retired from his practice in 1997.

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