

FALL/WINTER 2020

TRACKS

MAGAZINE

First pet sets *paw* in
ANIMAL CANCER CENTER



Virginia-Maryland
College of **Veterinary Medicine**



YEARS OF RUNNING TOGETHER

MESSAGE FROM THE DEAN

Challenges and opportunities

As we approach the end of a year filled with many challenges, including the COVID-19 pandemic and continuing injustices faced by the Black community, we are mindful of the ways our college is poised to address these and other challenges. Through our work in veterinary medicine, public health, and biomedical research, we actively wrestle with current and future challenges as we strive to improve the lives of animals, people, and communities.

Since joining the college in June, I have witnessed firsthand the passion and dedication of students, faculty, staff, alumni, referring veterinarians, donors, and partners in advancing our college mission. Thanks to their input, followed by a vote of support from the faculty, we have finalized the college's 2020-2026 Strategic Plan, charting a bold course for continued improvement and sustained impact.

Our plan for the future is guided not only by thoughtful efforts during the preceding year, but also by preceding decades of diligent and thoughtful work. This fall, as the college celebrates 40 years of veterinary education and the 10-year anniversary of the Master of Public Health program, we have embarked on a collective, deliberative process engaging college stakeholders to consider changing the name of the college from **Virginia-Maryland (Regional) College of Veterinary Medicine** to **Virginia Tech College of Veterinary Medicine and Public Health**. The renamed college would encompass the renamed **Virginia-Maryland School of Veterinary Medicine** and a public health program that will pursue steps to become a **School of Public Health**.

The process to consider this change reveres the college's inspiring heritage, recognizes the outstanding ongoing

work, and aims to create a significant stairstep for sustained growth based on current opportunities and challenges. Continued reflection and feedback are sincerely appreciated and given full consideration.

Looking to our future, we have set goals to nurture a thriving, diverse, and inclusive college community in alignment with InclusiveVT, the Principles of Community, and the college's 2020-2021 Diversity Action Plan. We plan to hire a director of diversity and inclusion, with membership on the college's executive board, to coordinate advancement of the college's diversity goals. We aim to foster an environment that allows each individual to learn and grow in a just and equitable college community.

This fall, the college's third clinical facility, the Virginia Tech Animal Cancer Care and Research Center, began operations to advance comprehensive oncology care and research to benefit pets and people alike. Offering integrated services, including medical, surgical, and radiation oncology, and frontline cancer diagnostics and treatment for dogs and cats, the center is a vital part of the Virginia Tech

Carilion Health Sciences Campus in Roanoke, Virginia. The facility, which houses the region's only radiation oncology service for pets, bolsters collaborative research with the College of Engineering and the Fralin Biomedical Research Institute.

We remain immensely grateful to our donors, alumni, and friends whose generous support enables our ongoing work to protect and enhance animal, human, and environmental health and welfare. In these pages, you will learn about some of our friends who have made a significant impact on the well-being and success of our students and programs.

This college owes so very much to our rich history that continues to inspire resilience, dedication, and innovation, yet our greater debt is to our future. We owe much to those who will depend on us in days to come for education, clinical care, community health, and innovative breakthroughs. Thank you for playing a role in our inspiring history, exciting present, and far-reaching future.



Dean M. Daniel Givens

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In September, the opening of the Animal Cancer Care and Research Center on the Virginia Tech Carilion Health Sciences Campus in Roanoke, Virginia, finalized the relocation of the college's oncology service from the Veterinary Teaching Hospital on the Blacksburg campus. The center's faculty clinicians offer comprehensive, integrated services, including medical, surgical, and radiation oncology, and frontline cancer diagnostics and treatment for dogs and cats.

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ON THE COVER: Animal Cancer Care and Research Center interim director Joanne Tuohy, assistant professor of surgical oncology, and oncology technician Tiffany Asbury with Kokomo, the first patient to be treated at the college's new center in Roanoke, Virginia. Photo by Andrew Mann

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X.J. Meng, University Distinguished Professor of Virology

By Kristin Rose Jutras

X.J. Meng, University Distinguished Professor of Virology in the Department of Biomedical Sciences and Pathobiology (DBSP), was named the founding director of Virginia Tech's new Center for Emerging, Zoonotic, and Arthropod-borne Pathogens, created to advance transformative science and develop effective countermeasures against emerging and reemerging infectious diseases that threaten the health of humans, animals, and plants worldwide.

The new center, which will be administratively established in the Fralin Life Sciences Institute, will include faculty participants from at least seven colleges and more than 25 departments across campus. Tanya LeRoith, DBSP clinical professor of anatomic pathology, is among the center's affiliated faculty.

"The critical mass of Virginia Tech faculty working in the area of infectious disease and pathogens is impressive, and their enthusiasm for the new center is exciting," said Matt Hulver, the institute's executive director. "Additionally, the creation of this new center could not be more timely" in light of the ongoing pandemic.

Aiming to foster and promote a cohesive, synergistic environment for interdisciplinary, collaborative research, the center "has several overarching objectives that include translating basic and mechanistic research in infectious diseases into tangible results, such as vaccines, antimicrobial drugs, intelligent infrastructure, and diagnostics that benefit the global society," said Meng, who is a member of the National Academy of Sciences and a Fellow of both the National Academy of Inventors and the American Academy of Microbiology.

“

The global impact of COVID-19 has reinforced Virginia Tech's ability to be responsive and agile. ”

- Executive Vice Provost Don Taylor, interim vice president for Research and Innovation

Along with developing science-based solutions, the center's interdisciplinary research will train the next generation of infectious disease scientists and help recruit top faculty and students. In addition, the center will better position Virginia Tech to acquire large center grants, program grants, and training grants that typically require an extensive team of scientists from different disciplines.

Given that the majority of emerging human infectious diseases are of animal origins because of increasingly close interactions among humans, domestic animals, and wildlife—brought on by climate change, backyard farming, animal poaching, and bushmeat consumption, for example—the center will draw upon Virginia Tech's existing expertise in biological, biomedical, medical, engineering, agricultural, veterinary, plant, social, and environmental sciences. An Advisory Leadership Committee representing the range of academic units, including the veterinary college's DBSP, has been working to solidify the center's themes and direction.

"The global impact of COVID-19 has reinforced Virginia Tech's ability to be responsive and agile," said Executive Vice Provost Don Taylor, interim vice president for Research and Innovation. "As a result, we've assembled faculty with diverse expertise, including infectious diseases, to foster a cohesive and synergistic environment for interdisciplinary research and training, which further enhances Virginia Tech's position in the commonwealth and the nation as a destination for solving infectious disease problems."

Beyond its attention to global diseases, the center plans to focus on significant local and state issues, such as microbial contamination in drinking water in Appalachian rural areas, Lyme disease, bat white-nose syndrome in Virginia, microbe-related food safety, and COVID-19 prevention.

Kristin Rose Jutras is the communications director for Virginia Tech's Fralin Life Sciences Institute.

NEW CENTER TO TACKLE INFECTIOUS DISEASES

DECONTAMINATION SYSTEM ALLOWS REUSE OF N95 MASKS

In the wake of the COVID-19 pandemic, the rapid depletion of personal protective equipment (PPE) used by health care workers gave rise to serious health and safety risks. To respond, a veterinary college team deployed a decontamination system that enables the reuse of scarce N95 respirator masks.



The veterinary college's Margie Lee, Karen Hall, and Pete Jobst in the decontamination facility

Leading the deployment project was Karen Hall, animal resource manager, who worked with Margie Lee, a medical microbiologist and head of the college's Department of Biomedical Sciences and Pathobiology; Pete Jobst, the college's director of facilities; and Jennifer Zambriski, assistant professor of epidemiology in the Department of Population Health Sciences and head of the Veterinary Teaching Hospital's infection control team.

Housed at the Center for One Health Research on the Virginia Tech campus, the decontamination system uses concentrated hydrogen peroxide vapor to destroy bacteria, viruses, and other contaminants, including the novel coronavirus SARS-CoV-2.

After being treated, biological indicators sterilized along with the masks are sent to Virginia Tech Animal Laboratory Services, which tests the indicators to ensure that sterilization is complete. Developed by Lee, clinical assistant professor of clinical microbiology Tessa LeCuyer, and clinical laboratory scientists Diamond McClendon and Alex Shelor, the test looks for bacterial growth. If no organisms grow, the respirator masks are considered safe for reuse.

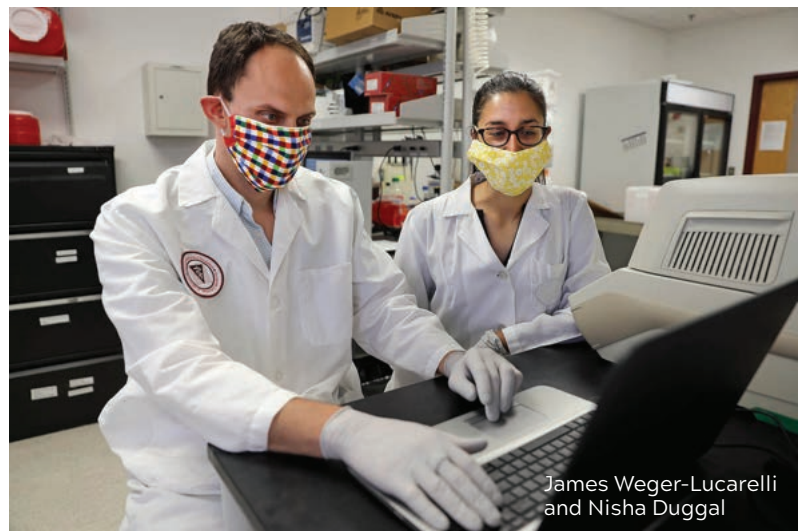
"We're giving people on the front line of this pandemic a little peace of mind that they actually have the supplies they need to protect themselves while they are saving lives," said Lee.

REVERSE GENETICS SYSTEM TO FACILITATE COVID-19 RESEARCH

Department of Biomedical Sciences and Pathobiology researchers James Weger-Lucarelli and Nisha Duggal are establishing a reverse genetics system for SARS-CoV-2 to serve as the basis for vaccine design and to facilitate the study of viral mutations associated with COVID-19 severity and viral transmission.

"The reverse genetics system ... will allow us to manipulate the SARS-CoV-2 viral genome so that we can discover weaknesses in the virus to exploit," said Weger-Lucarelli, a research assistant professor.

SARS-CoV-2 stores its genetic material in ribonucleic acid (RNA), as opposed to deoxyribonucleic acid (DNA), making it difficult to study and manipulate the viral genome. With a reverse genetics system, scientists can convert the virus's RNA back into DNA through a process called reverse transcription.



James Weger-Lucarelli and Nisha Duggal

Presented with a novel respiratory pathogen, researchers have no available animal models that enable the use of templates from earlier reverse genetics systems, explained Duggal, an assistant professor of molecular and cellular biology. In the meantime, Weger-Lucarelli and Duggal will modify the virus to a mouse-adapted strain, a model that will recapitulate human disease for *in vivo* studies of vaccine efficacy and antiviral therapeutics.

Initially funded by Virginia Tech's Fralin Life Sciences Institute, Weger-Lucarelli was awarded a National Science Foundation EAGER grant to examine mouse hepatitis virus as a model for SARS-CoV-2, to identify the biomarkers, and to investigate the severity and transmission of the virus by integrating genotype, phenotype, and environment.

UNIQUELY PREPARED FOR A PANDEMIC

Veterinary college alumni have their boots on the ground

By Sarah Boudreau

CARA CHERRY (DVM '10)

"I feel a responsibility to assist in situations like this," said Cara Cherry, a veterinary epidemiologist who volunteered for a month on the One Health team at the Centers for Disease Control and Prevention's (CDC) Emergency Operations Center.

At the CDC, Cherry studies rickettsial diseases and works with state health departments to guide their policies and approaches to testing—but she's no stranger to emerging diseases and to adapting to rapidly changing information.

During her final year of the DVM program at the veterinary college,

Cherry completed an external rotation with the CDC's Epidemiology Elective Program, working with fellow college alumna Jennifer McQuiston (B.S. '93, DVM '97, M.S. '98). (See story below.)

After going on to complete an MPH at the University of Minnesota, where she was a resident in preventive medicine, Cherry entered a two-year outbreak investigation training program at the National Park Service, visiting 13 parks across the country. Then, in 2014 and 2015, she twice traveled to Liberia to work on contact tracing during the Ebola outbreak.

Growing up, Cherry always knew she wanted to be a veterinarian, though she was not aware of the career

possibilities in public health. "When I was applying to vet schools," she said, "I read about Virginia-Maryland's public/corporate track, which was my introduction to the idea of veterinary public health, that animal health could affect human health, that I could still do what I always wanted to do, but could take it in a new direction."

Cherry believes that her One Health-focused veterinary training has been invaluable to her work at the CDC. "The One Health concept is something veterinary medicine has really embraced, and I think more and more people outside of our profession are getting it," she said. "This outbreak really puts a spotlight on that."

JODY KULL (DVM '04)

Jody Kull is dairy farming's godsend—especially in the wake of the challenges wrought by the pandemic.

One of four dairy professionals who, in March, joined the board of directors of the Center for Dairy Excellence and the Dairy Excellence Foundation, Kull filled a new position designated for a veterinarian with experience consulting dairy clients. She operates Valley Mobile Veterinary Services, which focuses on food animal medicine in a seven-county area across Pennsylvania.

Throughout the COVID-19 crisis, Kull has assembled resources to educate her clients about how the pandemic can affect the supply system and their businesses at large. She knows firsthand that those in the agriculture industry are weathering financially difficult times.



CAPT. JENNIFER MCQUISTON (B.S. '93, DVM '97, M.S. '98)

In early February, Jennifer McQuiston received an urgent call: A plane carrying 91 American citizens evacuated from Wuhan, China, would soon touch down at Lackland Air Force Base in San Antonio. The CDC needed her in the field.

Deputy director for the National Center for Emerging and Zoonotic Infectious Diseases' Division of High-Consequence Pathogens and Pathology (DHCPP) since 2016—and long accustomed to pivoting in response to disease outbreaks—McQuiston set off for Texas

to coordinate a team that would set up quarantine and testing facilities for the repatriated Americans.

Once on base, the team worked "hand in hand with partners from all over the U.S. government" to ensure that the passengers were safely received, screened, quarantined, and cared for, said McQuiston, a captain in the U.S. Public Health Service Commissioned Corps.

Over the ensuing two weeks, the CDC team—epidemiologists, quarantine officers from the Division of Global Migration and Quarantine, a contracts officer, a resiliency officer, an infection

STEVE REKANT (DVM '13, MPH '13)

As an officer in the CDC's Epidemic Intelligence Service training program, Steve Rekant landed in Oregon, one of the first states to be hit hard with COVID-19. Brought in during early discussions of the pandemic in January, Rekant has since been assigned to the Oregon Health Authority, where he works on a broad expanse of tasks.

"Most of my time is spent with the health intelligence team, which manages data, performs analyses, and prepares reports," he explained. He also has worked as a senior health advisor, collaborating with local public health authorities.

To help break the disease's cycle of transmission, Rekant both participated in and trained others in contact tracing and case interviewing. In addition, he worked on guidelines for the COVID-19 response, quickly revising and updating as new information about the virus became available and circumstances changed.

"The future of outbreak investigations is that they change and evolve as the outbreak changes," Rekant said. "That's both something I learned in vet school and something I've seen along the way."

Before his time at the veterinary college, Rekant had lost interest in the idea of a traditional, small animal veterinary career. But after

talking to Bettye Walters, then-director of the college's Center for Public and Corporate Veterinary Medicine, about the public/corporate track and dual-degree DVM/MPH options, he gained a new focus: public health.

In his day-to-day work on the COVID-19 response, Rekant uses more than just the skills he picked up in epidemiology and herd health courses in the DVM/MPH program.

"One of the skills I learned in vet school that has served me quite well during this pandemic response is critical thinking. And I learned how to talk to folks and be sympathetic and empathetic. That was something I was able to build and hone during school."

"While some producers are being asked by processors to downsize, sell cows, or dump milk, I am helping to facilitate whatever my producers need to maintain their best milk supply possible," Kull said. She has connected clients with information that will help them develop contingency plans for sick workers, establish safety policies for visitors to their farms, and apply for Paycheck Protection Program loans through the Small Business Administration.

Along with supporting the region's producers, Kull has made videos to educate 4-H groups and high school agriculture classes and has published a robust suite of information online for easy access.

These efforts were particularly valuable when stay-at-home orders were first implemented and panic-buying depleted grocery stores' stock. Kull educated the public about food systems and, by way of her work with the American Dairy Association NorthEast, helped move provisions to those stores with limited dairy supplies.

"Teaching my producers to make a safe and healthy product that is marketable and profitable and educating my community about that process," Kull said, "is what my veterinary education trained me to do every day of the week."

control specialist, and a public affairs officer—was joined by additional staff to oversee the health and day-to-day care of those quarantined. Among the new arrivals was a familiar face, a fellow veterinary college alumna who is a veterinary epidemiologist with the DHCPP's Viral Special Pathogens Branch.

McQuiston first worked with Caitlin Cossaboom (B.S. '10, MPH '14, Ph.D. '15, DVM '17), a lieutenant in the U.S. Public Health Service, when Cossaboom trained in the CDC's Epidemic Intelligence Service, a two-year postdoctoral program for aspiring epidemiologists. "I've been [at the CDC] for 22 years,

and whenever I see Virginia-Maryland students, I get excited. Interest in public health has really grown since the DVM program expanded and collaborated with the Public Health Program," McQuiston said.

To be sure, the veterinary college's One Health approach to research, education, and service that aims to protect the health and well-being of animals, people, and the environment ably prepares its graduates to navigate pandemics like COVID-19.

"I always say that veterinarians are uniquely positioned to think about epidemiology in a different way

compared to the training that medical doctors receive. Herd health, public health, all that foundational basis I got from the veterinary college and from my work with [professor of production management medicine/epidemiology] Kevin Pelzer, who was my public health instructor," McQuiston said. "I've worked more on human medicine than animal medicine throughout my life, but the principles I was taught in veterinary school are absolutely critical to this work."

Note: Only one of the evacuated Americans at Lackland tested positive for COVID-19.

CAITLIN RIVERS (MPH '13, PH.D. '15)

In May, Caitlin Rivers testified before the U.S. House Appropriations Subcommittee on Labor, Health and Human Services, and Education, advising the federal government to develop a national plan to eliminate test shortages and anticipate bottlenecks in the supply of reagents and materials in response to the COVID-19 pandemic.

An epidemiologist, Rivers is an assistant professor in the Department of Environmental Health and Engineering at the Johns Hopkins Bloomberg School of Public Health and a senior scholar at the Johns Hopkins Center for Health Security, a think tank whose mission is to “protect people’s health from epidemics and disasters and ensure that communities are resilient to major challenges.”

While earning an MPH in the infectious disease concentration at the veterinary college and a Ph.D. in genetics, bioinformatics, and computational biology at Virginia Tech, Rivers was awarded an Emerging Leaders in Biosecurity Fellowship through the Center for Health Security, as well as a Department of Defense Science, Mathematics, and Research for Transformation Scholarship, guaranteeing her a position in the U.S. Army Public Health Command. Rivers then worked in the epidemiology and disease surveillance directorate at the Army Public Health Center before beginning her position at Johns Hopkins.

During the height of the pandemic, Rivers has written several articles for The Washington Post and spoken with scores of journalists. On Twitter, she offers concise, sharp updates on COVID-19 research and policies to more than 146,000 followers who look to her for information.

In her testimony before Congress, Rivers emphasized the need for improved diagnostic testing and contact tracing, as well as more support for health care system capacity. Looking to the future, she urged lawmakers to establish a national center to predict and analyze pandemic trends and to credibly inform the decision-making of federal and state officials.

“There is some misconception that because COVID-19 is unprecedented, it is not worth designing new systems around,” Rivers told Congress. “But, in fact, outbreaks that threaten our national interests are unsettlingly common.”



BETSY SCHROEDER (DVM '16, MPH '16, PH.D. '20)

For Betsy Schroeder, Pennsylvania’s public health veterinarian, the COVID-19 crisis has meant nonstop work on the front lines.

“It’s something new every single day, it’s both stimulating and exhausting at the same time, and this is the most important work I’ll probably ever do in my career,” said Schroeder, who has acted as the co-operations section chief for the Pennsylvania Department of Health’s Incident Command System since January.

“This week alone,” Schroeder said, “I’ve been on site visits with a CDC strike team to food-processing facilities that are experiencing outbreaks in their workforce, presented on veterinary practice guidelines to the Pennsylvania Veterinary Medical Association, worked on a task force to provide more testing across Pennsylvania, notified hospitals of incoming shipments of Remdesivir, helped coordinate plans for universal testing in long-term care facilities, pushed out new guidance from CDC—which was modified to be specific to Pennsylvania—and assessed requests to test cats, dogs, ferrets, and horses for SARS-CoV-2.”

Schroeder believes that her ability to adapt to new and varied situations was sharpened during her time at the veterinary college. A graduate of the public/corporate track, she was introduced to a diverse set of hands-on experiences—“from doing necropsies on an armadillo, to assessing canine rabies vaccination programs in Ethiopia, to learning how to respond to a mass bat exposure in Chile”—each of which formed the foundation for her work first as an epidemic intelligence officer and then as a state public health veterinarian.

And she’s not the only veterinary college alumnus guiding Pennsylvania during the pandemic. “The state veterinarian, Kevin Brightbill (DVM '03), has joked that of course there would be two Hokies leading veterinary public health in Pennsylvania,” said Schroeder.

LINDSEY MCCRICKARD SHIELDS (DVM '11)

The surveillance lead for the Infectious Disease Detection and Surveillance (IDDS) project—funded by the U.S. Agency for International Development Lindsey Shields collaborates with teams worldwide to improve surveillance systems that track infectious diseases.

“In the day to day, I work with our country teams, advising on best practices for outbreak responses enacted globally, strengthening surveillance systems using new electronic tools, and thinking through how to best target our project funding to maximize our support of the national government’s response,” said Shields, a diplomate of the American College of Veterinary Preventive Medicine.

Although many of the teams that Shields works with have shifted to surveilling the current pandemic,

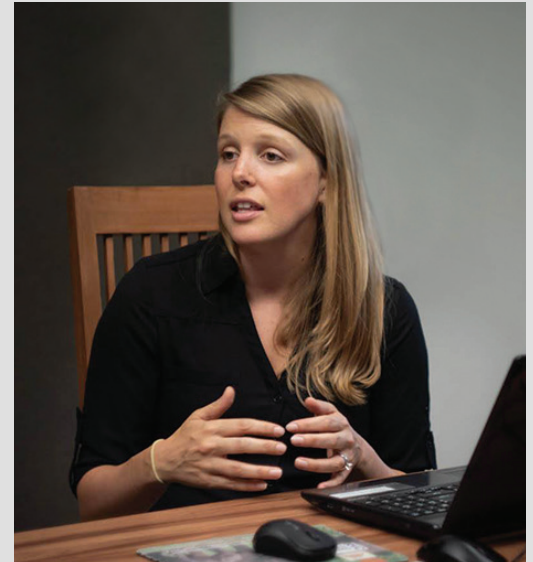
several remain focused on infectious diseases that continue to threaten humans and animals around the world.

In addition to her position with the IDDS project, Shields shares her expertise with the District of Columbia Department of Health, from contract tracing in priority populations to writing protocols and training materials.

During her time as a student, Shields believes that classes in public health, virology, bacteriology, and epidemiology were significant in her professional development, while her program track prepared her to work in a variety of contexts.

“I was lucky enough to be [in the public/corporate track] during vet school,” Shields said, “which meant I had the opportunity in my fourth year to really try out a lot of different paths within veterinary medicine, including working for the CDC in Anchorage, Alaska, and for the Food and Agriculture

Organization [a specialized agency of the United Nations] in Rome. I focused on outbreak response during those clerkships, getting me ready to pursue a path in global public health and outbreak response across both human and animal health.”



JIM TRYBUS (DVM '04)

Upon first entering veterinary school, Jim Trybus, like countless other veterinary students, thought he wanted to practice small animal medicine. But after the college’s broad curriculum had exposed him to other veterinary disciplines, the intricacies of pathology and diagnostics altered his course.



“I was able to work in the teaching hospital’s clinical pathology laboratory as a veterinary student, which really solidified my fascination with diagnostics and pathology,” Trybus said.

Today, Trybus, a diplomate of the American College of Veterinary Pathologists, serves as director of laboratories for North Carolina’s Veterinary Diagnostic Laboratory System, which diagnoses, conducts surveillance, and assists in responding to and preventing animal disease.

Under Trybus’ sure hand, the system’s central, full-service laboratory in Raleigh is working with the North Carolina Department of Health to lend molecular diagnostic equipment that will bolster the department’s COVID-testing capabilities. Meanwhile, the lab continues to test for other diseases, such as African swine fever, classical swine fever, and avian influenza, in order to monitor disease outbreak in the animal population.

“Although we are not directly involved in COVID testing in humans—as some veterinary diagnostic labs are—or in animals, we remain an essential part of maintaining the food supply through regulatory, diagnostic, and outbreak disease testing of North Carolina’s animal industry,” Trybus said.

During this period of heightened awareness, Trybus is quick to acknowledge the crucial work conducted day in and day out by the support staff and technicians in the state’s four laboratories. “This dedicated, highly trained, behind-the-scenes workforce can, unfortunately, sometimes be overlooked,” he said.

Sarah Boudreau is a student in the M.F.A. program in creative writing.

ONE HEALTH

PUBLIC HEALTH PROGRAM AT THE READY

As communities worldwide continue to confront challenges wrought by COVID-19, the veterinary college's Public Health Program is at the forefront of the fight: Current students are learning in real time, while alumni put their knowledge to work across the U.S. and beyond.



On Friday nights, a group of public health students known as “COVID Crushers” sets up in downtown Blacksburg and distributes free masks, hand sanitizer, and educational resources. The effort has helped the New River Health District (NRHD) far outperform some models’ projections of the virus’s spread.

The New River Academic Health Department (NRAHD), a partnership between the Department of Population Health Sciences (DPHS) and the NRHD, was well positioned to help address the emergent public health challenge. Before the NRHD’s first COVID-19 case had appeared, a call center was established. By mid-April, 22 Medical Reserve Corps (MRC)-trained MPH and dual DVM/MPH students had volunteered at the call center, and 10 students had volunteered at drive-thru testing sites.



Among the five winners of the TECH Together Campaign, which charged students to devise solutions to prevent the spread of COVID-19 and provide comfort, was a team of MPH and dual DVM/MPH students—Ella Rak, Jaclyn Abramson, Teace Markwalter, and Hannah Reed—and their faculty advisor, Sophie Wenzel, DPHS assistant professor of practice and NRAHD coordinator. The team’s interdisciplinary work to develop a reusable, scalable, clear facial covering named “TransparenSee” will facilitate the rapid production, testing, and distribution of some 3,000 masks to improve communication and accommodate individuals with hearing disabilities.



ALUMNI IN THE FIELD

Malik Outram (MPH '20) is the COVID-19 Southwest Regional Containment

Advisor for the Virginia Department of Health. Supervised by regional epidemiologist Paige Bordwine (MPH '11), Outram is responsible for coordinating case investigations and contact tracing throughout the region, which includes training the health districts’ contractors and conducting case investigations. He also serves as a technical advisor for a team of case investigators and contact tracers, providing training, oversight, and mentorship, with the goal of becoming a rapidly deployable surge team that handles outbreaks whenever they appear.



From left: MPH students Jaclyn Abramson, Teace Markwalter, Ella Rak, and Sarah Work (MPH '20) with former New River Health District health counselor Barbie Zabielski

Under the mentorship of former NRHD health counselor Barbie Zabielski, a team of MRC-trained MPH and dual DVM/MPH students provided testing and other key response services to older adults in long-term care facilities—maintaining quality and efficiency when communication is limited, resources are constrained, and risks are high.

MPH students Fernanda Gutierrez and Laura Lang developed and adapted educational materials in both Spanish and English, contact tracing training tools, and a podcast, “Your Health Hotline,” exploring expert perspectives on the pandemic’s impact, creative solutions to mitigate the impact, and preventive measures to limit the spread of the virus.

Gloria Kang (MPH/Ph.D. '15) is a Prevention Effectiveness Fellow for the Centers for Disease Control and Prevention, working with a spreadsheet-based tool, COVID-19Surge, that estimates the demand for hospital services.

Julia Sherry (M.S./MPH '17) is a program evaluation specialist for Water Mission, an international network of trained water, sanitation, and hygiene promoters who distribute hygiene kits, ensure safe water for patient care, and install handwashing facilities at high-traffic settings.

Our public health alumni use their One Health training to serve international, national, and local communities. Learn more at publichealth.vt.edu/research-engagement/covid19/.

MAJOR RESEARCH GRANTS

Department of Biomedical Sciences and Pathobiology (DBSP)
Department of Population Health Sciences (DPHS)
Department of Small Animal Clinical Sciences (DSACS)

August 2019 – September 2020

Animal Model Research for Veterinarians (AMRV)*

Principal Investigator (PI): X.J. Meng, DBSP; Co-PI: S.A. Ahmed, DBSP | Faculty Mentors/Committee Members: Kathy Alexander, College of Natural Resources and Environment; Irving Coy Allen, DBSP; Andrea Bertke, DPHS; Michele Borgarelli, DSACS; Clayton Caswell, DBSP; John Chappell, Fralin Biomedical Research Institute (FBRI) and College of Engineering (COE); Jessica Crawford, VMCVM Office of Research and Graduate Studies; Shannon Farris, FBRI and DBSP; Michael Fox, FBRI; Robert Gourdie, FBRI and College of Agriculture and Life Sciences (CALS) and COE; Margie Lee, DBSP; Caroline Leeth, CALS; Liwu Li, College of Science (COS); Xin Luo, DBSP; Konark Mukherjee, FBRI; Yuchin Albert Pan, FBRI and DBSP; Steven Poelzing, FBRI; John Rossmesl, DSACS; Ed Smith, CALS; Sharon Swanger, FBRI and DBSP; Michelle Theus, DBSP; Hehuang Xie, Fralin Life Sciences Institute and DBSP; Lijuan Yuan, DBSP; Chenming Zhang, CALS and COE | Total Award: \$1,399,631 | Duration: 5 years | Funding Agency: National Institutes of Health (NIH) T32

Broad One Health Endectocide-based Malaria Intervention in Africa

PI: Cassidy Rist, DPHS; Co-PI/Co-Investigator (Co-I): Kang Xia, CALS; Roger Schuerch, CALS | Total Award: \$1,408,507 | Duration: 4 years | Funding Agency: Unitaid

Characterizing the Impact of Small Regulatory RNAs on the Virulence of *Brucella* spp.

PI: Clay Caswell, DBSP | Total Award: \$431,295 | Duration: 2 years | Funding Agency: National Institute of Allergy and Infectious Diseases (NIAID)

Development and Application of Non-thermal High-frequency IRE to Treat Hepatic Tumors

PI: Rafael Davalos, COE; Co-I: Nikolaos Dervisis, DSACS; John Robertson, COE; Iain McKillop, Carolinas HealthCare System (CHCS); David Iannitti, CHCS | Total Award: \$2,220,260 | Duration: 5 years | Funding Agency: National Cancer Institute

Development of an Improved Vaccine Against *Brucella abortus*

PI: Clay Caswell, DBSP; Co-PI: Irving Coy Allen, DBSP | Total Award: \$155,643 | Duration: 2 years | Funding Agency: NIAID

Development of a Thermostable Rotavirus Vaccine for Mucosal Delivery Without Need for Reconstitution

PI: Lijuan Yuan, DBSP; Total Award: \$362,250 | Duration: 8 months | Funding Agency: Universal Stabilization Technologies Inc. (NIAID, NIH flow-through)

Food Animal Residue Avoidance and Depletion Program (VT Component)

PI: Jennifer L. Davis, DBSP | Total Award: \$150,000 | Duration: 1 year | Funding Agency: U.S. Department of Agriculture (USDA)/National Institute of Food and Agriculture

Histotripsy for Treatment of Canine Appendicular Osteosarcoma

PI: Joanne Tuohy, DSACS; Co-I: Eli Vlaisavljevich, COE; Irving Coy Allen, DBSP; Sheryl Coutermarsh-Ott, DBSP; Nikolaos Dervisis, DSACS; Shawna Klahn, DSACS; Kemba Clapp | Total Award: \$144,107 | Duration: 1 year | Funding Agency: Focused Ultrasound Foundation

Integrating Genotype, Phenotype, and Environment to Identify Biomarkers of Coronavirus Disease Severity and Transmission

PI: James Weger-Lucarelli, DBSP; Co-PI/Co-I: Tanya LeRoith, DBSP; Sheryl Coutermarsh-Ott, DBSP; Lin Kang, Edward Via College of Osteopathic Medicine (VCOM) | Total Award: \$300,000 | Duration: 2 years | Funding Agency: National Science Foundation EAGER Award

Investigation of the Immunostimulatory Response to Mechanical High Intensity Focused Ultrasound (Histotripsy) in Dogs with Naturally-occurring Soft Tissue Tumors

PI: Shawna Klahn, DSACS; Co-I: Eli Vlaisavljevich, COE; Nikolaos Dervisis, DSACS; Joanne Tuohy, DSACS; Sheryl Coutermarsh-Ott, DBSP; Irving Coy Allen, DBSP; Kemba Clapp | Total Award: \$162,460 | Duration: 1 year | Funding Agency: Focused Ultrasound Foundation

Nanoparticle-mediated Histotripsy for Noninvasive and Targeted Ablation of Metastatic Breast Cancer

PI: Eli Vlaisavljevich, COE; Co-I: Irving Coy Allen, DBSP; Jenny Munson, COE | Total Award: \$602,587 | Duration: 3 years | Funding Agency: NIH R21 Trailblazer Award

Novel Nanovaccines Against Opioid Use Disorders

PI: Chenming Zhang, CALS and COE; Co-PI/Co-I: Marion Ehrich, DBSP | Total Award: \$8,716,489 | Duration: 4 years | Funding Agency: National Institute on Drug Abuse

Peripheral Nerve Preparations for Study T05200

PI: Thomas Cecere, DBSP; Co-I: Sandy Hancock, VMCVM | Total Award: \$139,292 | Duration: 15 months | Funding Agency: Experimental Pathology Laboratories Inc.

Preventing Norovirus and *Clostridium difficile* Gastroenteritis by Engineered Probiotic Yeast *Saccharomyces boulardii* Secreting Multi-specific Single-domain Antibodies

PIs: Lijuan Yuan (MPI), DBSP; Hangping Feng (contact PI), University of Maryland at Baltimore; Co-I: Viviana Parreño, National Agricultural Technology Institute, Argentina | Total Award: \$3,275,651 | Duration: 4 years | Funding Agency: NIAID

Selective HDAC6 Inhibition Decrease SLE in Mice

PI: Chris Reilly (VCOM); Co-I: Xin Luo, DBSP; Total Award: \$466,545 | Duration: 3 years | Funding Agency: NIAID

USDA — Veterinary Services Terminology Support

PI: Julie Green, DBSP; Co-PI/Co-I: Jeff Wilcke, DBSP | Total Award: \$250,000 | Duration: 1 year | Funding Agency: USDA/Animal and Plant Health Inspection Service

Virginia Cooperative Extension Partnerships for Rural Opioids Technical Assistance

PI/Program Director (PD): Kathy Hosig, DPHS; Co-PI/Co-PD: Crystal Tyler-Mackey, CALS; Karen Vines, CALS | Total Award: \$1,099,739 | Duration of Award: 2 years | Funding Agency: Substance Abuse and Mental Services Administration Agency

** Under the leadership of Meng, Ahmed, and Roger Avery—the veterinary college's former associate dean for research—the AMRV has a solid history of securing federal funding to train future biomedical researchers. In 2006, the program received NIH funding to train four veterinarians; and in 2012, the AMRV received another NIH grant of \$1.06 million, which funded six trainees.*



No BANDS No CONFETTI

THE OPENING OF THE ANIMAL CANCER CARE AND RESEARCH CENTER
IS STILL GRAND FOR THE REGION'S PETS *By Mindy Quigley*





Left: Peter Haberkorn holds his cat, Kokomo, in front of the new center.
Right: Nick Dervisis, associate professor of oncology, and Jennifer Carroll, oncology resident



Grand openings are usually, well, grand.

In line with these strange, socially distanced times, however, the recent grand opening of Virginia Tech's state-of-the-art Animal Cancer Care and Research Center in Roanoke, Virginia, was a decidedly modest affair.

Instead of a local dignitary cutting a ribbon or a popular politician delivering a rousing speech, the new clinical and research facility was inaugurated by an 11-pound domestic shorthaired cat named Kokomo, the first pet to set paw in the new center as a clinical patient.

Although Kokomo is surely more interested in batting around her favorite yellow banana toy than in cutting-edge medicine, her presence at the center, which is housed in the 139,000-square-foot addition to the Fralin Biomedical Research Institute at VTC, represented the culmination of more than six years of planning.

"This center will develop and deploy novel modalities for treating a variety of cancers. We are grateful for the outstanding faculty, staff, and partners of this center that fuel its far-reaching impact," said M. Daniel Givens, dean of the Virginia-Maryland College of Veterinary Medicine at Virginia Tech. "This exciting new initiative creates the opportunity for advanced, integrated cancer treatment for dogs and cats in our region and transformative, translational research that will advance cancer treatment in pets and people alike."

Accommodating the relocation and expansion of the oncology service from the Veterinary Teaching Hospital in Blacksburg, the new facility is a vital part of the Virginia Tech Carilion (VTC) Health Sciences Campus, adjacent to the VTC School of Medicine, and integrates human and veterinary biomedical

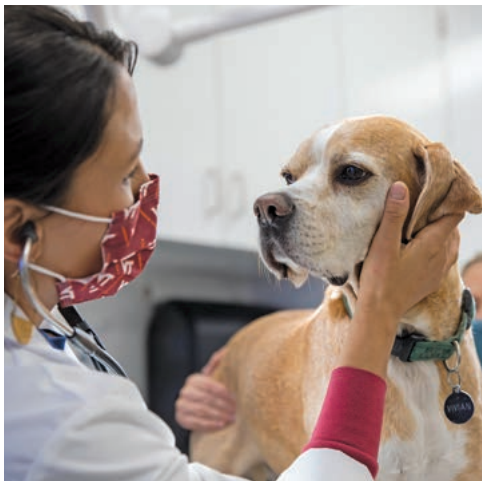
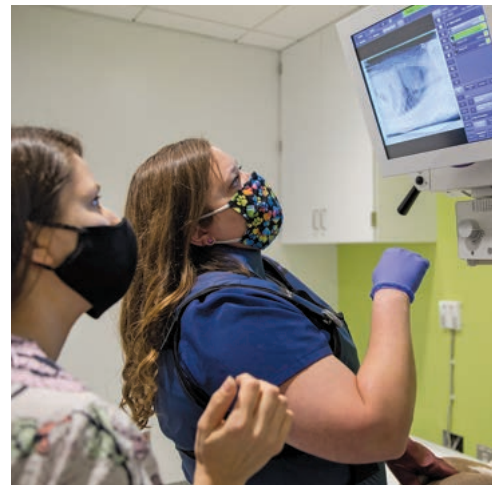
researchers. The center's faculty clinicians offer comprehensive, integrated services, including medical, surgical, and radiation oncology, and frontline cancer diagnostics and treatment for dogs and cats.

Kokomo was referred to the center to explore treatment options for a bladder tumor called transitional cell carcinoma. "When Kokomo was diagnosed in October of last year [at a clinic in Arizona], they told us she would likely only live until spring," said owner Peter Haberkorn, who, along with his husband Aaron Betsky, adopted Kokomo 11 years ago. "She's already exceeded expectations, so we felt like we had to give her a fighting chance."

Medical oncologist Shawna Klahn, an associate professor in the Department of Small Animal Clinical Sciences (DSACS), is overseeing Kokomo's care. "Kokomo has been a wonderful patient," Klahn said. "She's very sweet, but you can tell she's a tough cookie, too."

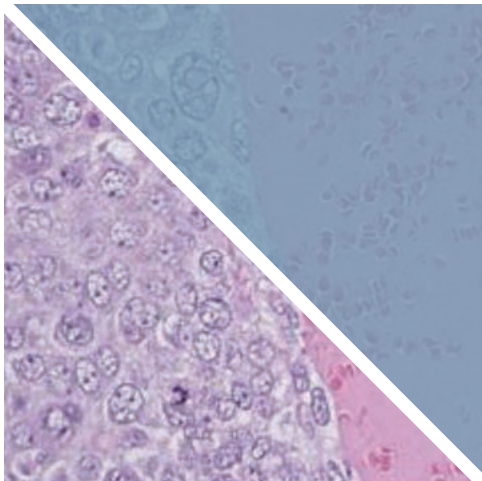
Patients like Kokomo and their owners aren't the only beneficiaries of the oncology clinicians' expertise and advanced care. The center's unique co-location alongside human-focused clinicians and researchers embodies a true One Health approach that recognizes the dynamic interdependence of animal, human, and environmental health. Because companion animals often develop the same or similar cancers as humans, therapies developed by researchers can help human patients and serve as new treatments for pets.

"The Animal Cancer Care and Research Center here on the Health Sciences and Technology Campus in Roanoke is an important addition to Virginia Tech's Cancer Research Alliance," said Michael J. Friedlander, Virginia Tech's vice president for health sciences and technology.



THE ADVANCED TECHNOLOGY IN IMAGING AND RADIATION THERAPY IN OUR NEW FACILITY HAS SO MUCH POTENTIAL. WE ARE COMMITTED TO PUSHING THE BOUNDARIES THROUGH RESEARCH IN ORDER TO DELIVER EVEN BETTER OUTCOMES.

- Ilektra Athanasiadi, assistant professor of radiation oncology



The alliance connects more than 30 researchers in Blacksburg and Roanoke into a cancer research community. Coupled with Virginia Tech's new partnership with the Children's National Hospital in Washington, D.C., the Animal Cancer Care and Research Center adds a new dimension: Certain cancers that occur spontaneously in pets are similar to those that occur in the human pediatric population.

Along with the cancer research community, the needs of Virginia Tech students are tightly integrated into the center's mission. Clinical services work in tandem with translational research and health sciences degree programs involving the veterinary college and the Fralin Biomedical Research Institute at VTC, immersing students in a best-in-class, multidisciplinary learning environment.

For medical oncologist Nick Dervisis, a DSACS associate professor who helped build the veterinary college's oncology service in a single room at the teaching hospital in Blacksburg, the center's opening is a dream come true. "I'm an optimistic person, but this is even better than I imagined," Dervisis said. "With this team and this facility, we are ready to make a big impact."

Accelerating veterinary medicine: First-in-region radiation therapy

Experiencing the new cancer center's radiation therapy suite—nicknamed The Vault—is akin to walking onto the set of a sci-fi movie. Sounds are strangely muffled by concrete walls with an average thickness of 6 feet, special shielding, and other elements designed to allow this powerful therapy to be delivered safely. The floor alone was constructed of more than 400 cubic yards of concrete.

The Vault's centerpiece is a \$3.28 million Varian linear accelerator, one of the most advanced linear accelerators in the country and one of only a handful at veterinary

institutions that meets criteria certifying it for human use. For good reason, the oncology team working with the high-tech machine has given it an appropriately futuristic nickname: "Hokietron."

Radiation therapy, though long part of the standard-of-care treatment options for many forms of human cancer, has never before been available to pets in Southwest Virginia. In November, the center began offering the treatment, becoming the region's only radiation oncology service for pets.

Beyond advancing the treatment of cancer in companion animals, the center's imaging capabilities stand to provide valuable insights to veterinarians, biomedical engineers, and human medical researchers in the fight against cancerous tumors that are common to both dogs and people.

"The advanced technology in imaging and radiation therapy in our new facility has so much potential," said radiation oncologist Ilektra Athanasiadi, an assistant professor in DSACS. "We are committed to pushing the boundaries through research in order to deliver even better outcomes."

Bubbles and zapping, thunder and lightning: New cancer therapies

For decades, chemotherapy, radiation, and surgery have been the go-to trio of cancer treatments. But if a current slate of clinical trials at the Animal Cancer Center is successful, "bubbles" and "zapping" can be added to the list.

"One of the main goals of our lab is to defeat cancer using, yes, bubbles," said Eli Vlaisavljevich, an assistant professor in the Department of Biomedical Engineering and Mechanics in Virginia Tech's College of Engineering.

Vlaisavljevich and his team have partnered with oncology clinicians at the Roanoke center for several pilot studies that use a novel technique called histotripsy, which focuses ultrasound beams to create bubbles inside a defined area. Since the technique doesn't involve heat, damage to surrounding tissues is effectively avoided.

"To treat tumors, histotripsy can target cancerous cells with what we call 'bubble clouds' generated by ultrasound. The bubble clouds are made up of microscopic

areas of cavitation bubbles that destroy the cancerous tissue when they expand and collapse," Vlaisavljevich explained. Once the affected area is treated, the body's immune system kicks in to mop up the damaged cells and, the researchers hope, stimulates an immune response that will inhibit metastasis.

At present, histotripsy is being tested in two clinical studies involving dogs. The first will use the technique to target osteosarcoma bone tumors, which are remarkably similar in humans and canines, while the second will treat dogs with soft tissue sarcomas. Although histotripsy has been studied in humans, there is little data on its use in dogs or on these tumor types.

The principal investigator of the osteosarcoma study, Joanne Tuohy, an assistant professor of surgical oncology and the new center's interim director, is excited that this technology has the potential to help humans with osteosarcoma, an acutely painful disease in both species. Over the past three decades, the prognoses for people and dogs have not improved significantly.

"Patients—both humans and dogs—need new treatments," Tuohy said. "With the help of engineers, patients, owners, clinicians, and referring practitioners, I hope our trial can help move research forward."

Another partnership with the Department of Biomedical Engineering and Mechanics looks to perfect a device that employs electrical pulses to kill cancer cells.

Developed by Rafael Davalos, the L. Preston Wade Professor of Biomedical Engineering, the technology called High-Frequency Irreversible Electroporation, or H-FIRE, has been refined through longstanding collaborations with faculty at the veterinary college. H-FIRE has already been used successfully in equine and canine studies across a variety of tumor types.

Dervisis recently completed a pilot study using H-FIRE in dogs with liver cancer. "Essentially, we're zapping the tumor," he said. "To use technical terms, we apply high-frequency electrical pulses to the

Clockwise from top left: The center's Varian linear accelerator; oncology technicians Stefanie Olsen and Kayla Winchester; Kokomo; Joanne Tuohy, assistant professor of surgical oncology, and anesthesia technician Maryann Cline; Brittany Ciepluch, assistant professor of surgical oncology. Photos by Andrew Mann

cancerous tissue through a series of electrodes, which creates tiny openings in the cell membrane, ablating the targeted cells.”

In light of the success of the pilot study involving liver tumors, the oncology group has opened a new round of clinical trials, expanding the number of canine patients and the types of tumors to be treated. The current studies are focused on pancreatic, brain, and lung tumors, all cancers that can be difficult to treat in both humans and dogs.

Although the aims and methods of the new technologies are similar—curing a variety of cancers by destroying the tumors—Davalos and Vlasisavljevich characterize the differences quite simply. Because histotripsy relies on sound waves to create its trademark bubble clouds, Vlasisavljevich likens the technology to thunder. And H-FIRE’s electricity-based intervention? That’s lightning, of course.

A top-to-bottom approach to chemotherapy safety

The importance of personal protective equipment and proper ventilation has become a familiar refrain during the COVID-19 pandemic. For researchers at the Animal Cancer Center, however, safety protocols for handling potentially contaminated materials and preserving indoor air quality have long been the order of the day. These protocols are, in fact, woven into the very fabric of the new facility.

It’s universally known that chemotherapy can be hard on a patient’s body, causing such side effects as gastrointestinal problems and fatigue in both people and animals. Less frequently acknowledged is the potential harm that chemotherapy can have on those who administer it.

“Compared to the kind of high-dose exposure that cancer patients receive,” Klahn said, “research has shown that chronic low-level exposure to chemotherapy actually may have increased risk for the people who administer it.”

In response, Klahn and six other experts nationwide spearheaded an effort to raise awareness of the potential dangers surrounding the use of chemotherapy

drugs in veterinary medicine. In 2019, the group drafted a consensus statement for the American College of Veterinary Internal Medicine. Drawing on that expertise, Klahn worked closely with the Roanoke center’s construction team to ensure that the chemotherapy-delivery suite meets stringent safety guidelines.

The purpose-built space includes such features as special air-handling, an advanced biosafety cabinet, a three-room chemotherapy suite, and a secure hazardous waste disposal stream, making the center a national model for the safe handling and administration of chemotherapy.

THIS CENTER WILL DEVELOP AND DEPLOY NOVEL MODALITIES FOR TREATING A VARIETY OF CANCERS. WE ARE GRATEFUL FOR THE OUTSTANDING FACULTY, STAFF, AND PARTNERS OF THIS CENTER THAT FUEL ITS FAR-REACHING IMPACT.

— M. Daniel Givens, dean of the Virginia-Maryland College of Veterinary Medicine at Virginia Tech

Even as the space’s built-in features are crucial, the center’s highly skilled faculty and staff realize that ongoing training and adherence to policy set the facility apart.

This conscientiousness is the lynchpin of the center’s chemotherapy safety program. “We have policies for everything: administration and delivery of chemo, storage and disposal of drugs, discharging pets, even educating owners on how to safely handle pet waste,” Klahn said. “We share responsibility for modeling good practices.”

The people in the fight: New faculty, interim leadership, a new director on the horizon

Treating veterinary cancer is not for the faint of heart. Pets’ shorter lifespans, coupled with the inherent lethality of many cancers, makes oncology a specialty that attracts those who are motivated to fight long odds. And for many clinicians and researchers, more of the same is just not good enough.

“The cancers I focus on in my research have some of the direst prognoses in veterinary medicine. Many of these cancers, like osteosarcoma and pancreatic tumors, are also very aggressive in humans,” said Tuohy, who is exploring new therapies for these deadly tumors. “The survival expectation of dogs and people with osteosarcoma, as one example, hasn’t improved in decades. It’s such a painful cancer for patients and often highly metastatic.”

In the face of such bleak prognoses and profound suffering, Tuohy still believes that abstract questions are less important than the lives of her patients. “I think

it’s important to hold on to the positive outcomes,” she said, “but also remember the cases where things didn’t go well. We have to do that if we’re going to improve outcomes.”

Tina Pegg, the owner of Bradford, an 11-year-old mountain cur mix, shares Tuohy’s outlook.

Bradford, a protective, quirky dog that, Pegg said, “just showed up” right before Thanksgiving in 2011, had a big personality. Diagnosed with a pancreatic tumor that metastasized to a lymph node, Bradford recently died after undergoing an experimental procedure on the tumor.

Although the outcome wasn’t what was hoped for, Pegg understands the value of Bradford’s treatment. “Bradford was a trailblazer. He did what he had to do to contribute [to the advancement of science], and then he was ready to move on,” said Pegg. “I truly believe this was the right path for him.”



Left: Oncology technician Tiffany Asbury and oncology resident Ester Yang.

Right: The center's surgical suite

As the new center's interim director, Tuohy is surrounded by a team that shares her commitment to improving outcomes for animals like Bradford. Joining Athanasiadi, Dervisis, and Klahn, three new veterinarians were recently hired, expanding the ranks of the 11 doctors, six technicians, and four staff members who support the center's operations.

Radiation and medical oncologist Keiko Murakami has distinctive credentials, having completed two demanding residencies: one in radiation oncology at Purdue University, and one in medical oncology at Auburn University.

Oncologic surgeon Brittany Ciepluch completed an internship at the University of Florida, a residency at Texas A&M, and a surgical oncology fellowship at Colorado State University.

Nick Rancilio, a radiation oncologist and researcher who arrived from Auburn University, focuses on stereotactic and hypofractionated radiation therapy, techniques designed to deliver precisely-targeted radiation in fewer treatments.

In addition, a search for a permanent director to lead the growing team of cancer experts has been opened. "We're hoping," said Tuohy, "to find someone who is passionate about advancing the diagnosis,

treatment, and prevention of cancer in pets, as well as promoting the principles of One Health to achieve progress in cancer care for animals and people."

Well prepared in the face of difficult and sometimes emotionally painful work, the oncology team at the Animal Cancer Center is committed to uncovering ways to extend and improve the quality of their patients' lives. Like Tina Pegg's description of her dog's journey, they, too, believe they are on the right path.

Mindy Quigley is clinical trials coordinator in the veterinary college's Department of Small Animal Clinical Sciences.

PUBLICATION IN CANCER CELL ESTABLISHES SHARED "LIFE HISTORY" OF BRAIN CANCER IN DOGS AND PEOPLE

Humans and dogs share many aspects of their lives: food, homes, and a deep bond of mutual affection. Although these common bonds bring joy and comfort, one connection between the two species is emphatically negative. Both dogs and humans are uniquely susceptible to a devastating, aggressive brain tumor referred to as a glioma.

Although companion dogs develop glioma brain tumors spontaneously at about the same rate as people, the cancer is rare in both species. Upon its appearance, however, it tends to be swift-moving and notoriously resistant to treatment.

A group of researchers, including John Rossmeisl Jr., the Dr. and Mrs. Dorsey Taylor Mahin Professor of Neurology and Neurosurgery, recently published a landmark paper, "Comparative Molecular Life History of Spontaneous Canine and Human Gliomas," illustrating the depth of the commonalities between canine and human gliomas.

Analyzing tumor samples from dozens of gliomas in adults, children, and dogs to compare their molecular profiles, the team found a remarkable degree of similarity, particularly between pediatric and canine tumors. The locations of genetic mutations were often the same, as were disease processes, such as the way gliomas alter DNA's ability to repair itself.

Using the knowledge they gained in their comparative approach, researchers are already beginning to develop and evaluate novel treatment approaches for brain cancer. To that end, two canine glioma trials are now underway at the veterinary college.

For Rossmeisl, a veterinary neurologist, each of the data points in the study has a special significance: "I know the patients. Each of the canine tumor samples comes from a dog I treated." Moreover, each sample—whether taken from a child, an adult, or a dog—had a unique "life history." These patients' contributions may help write different endings for the life stories of the next generation of brain tumor patients.

GIVING TO THE COLLEGE



From left: Emily Schaefer, Shelley Duke, Michael Erskine, and Phil Duke at the Dukes' home in Middleburg, Virginia, in February

Unique collaboration benefits equine emergency and critical care services

Generous sponsorship from Marion duPont Scott Equine Medical Center Advisory Council Vice Chair Shelley Duke and her husband, Phil, has enabled Emily Schaefer, clinical assistant professor of internal medicine, to pursue a fellowship in equine emergency and critical care with The Ohio State University's College of Veterinary Medicine.

Spanning three years, the fellowship training occurs monthly on-site at both veterinary hospitals, providing Schaefer with advanced formal training led by American College of Veterinary Emergency and Critical Care (E/CC) board-certified veterinarians.

"The collaboration between Virginia Tech and The Ohio State University is imperative because it expands on the experience and expertise available at the Equine Medical Center," said Schaefer. "In order to achieve this board certification, one must be trained by other veterinarians within that specialty."

While the center's medicine and surgery specialists have the ability to successfully

treat equine emergencies, an E/CC board-certified specialist is not currently among its faculty clinicians.

Because Schaefer remains in her clinical position between training months, she is able to apply the latest techniques to emergency cases and to advance the assessment and support of critically ill horses. Her ongoing training also benefits the center's residents, interns, and students preparing for careers in equine medicine.

"I am thrilled to contribute to the care of our equine patients and am very grateful to the Dukes for supporting this endeavor," Schaefer said. "Mrs. Duke understands the critical nature of emergency veterinary care and the field's ever-changing new knowledge and information."

The Dukes, who have long supported the equine center's strategic priorities, have continued to exhibit considerable flexibility, often pivoting to bolster an endowed fund that allows the center to fill its greatest needs.

"None of this would be possible without donors like Mrs. and Mr. Duke who share the equine center's passion and constant drive to improve patient care and outcomes," said Schaefer.

"Mrs. Duke understands the critical nature of emergency veterinary care and the field's ever-changing new knowledge and information."

- Emily Schaefer, clinical assistant professor, Marion duPont Scott Equine Medical Center



Lynne Hoban (DVM '86), Margie Lee (DVM '86), and Mario Dance (DVM '90) during their time as students at the veterinary college

Endowed scholarship honors the college's first Black graduates

The veterinary college remains committed to promoting diversity and fostering an inclusive environment that encourages learning and growth for every member of the college community.

Among the actions supporting goals outlined in its 2020-2026 strategic plan, the college aims to increase scholarship funds to defray the educational costs of underrepresented minority students.

In alignment with this priority, the veterinary college is pleased to announce the creation of its first endowed scholarship for students of an underrepresented population with demonstrated financial need: The Hoban, Lee, and Dance Endowed Scholarship Fund. This scholarship is named in honor of the college's first Black graduates: Lynne Hoban (DVM '86), Margie Lee (DVM '86), and Mario Dance (DVM '90).

The college is mindful that this endowed scholarship is but one small step in support of its Principles of Community: "We take individual and collective responsibility for helping to eliminate bias and discrimination and for increasing our own understanding of these issues through education, training, and interaction with others."

Lynne Hoban (DVM '86)

When Lynne Hoban first arrived in Blacksburg after graduating from Cornell University, the college's large animal building and other structures had not yet been built, so classes were held in trailers.

Despite studying at a brand-new veterinary college, Hoban believes that her education was top-notch, well preparing her for a successful career in five states, including a fellowship at the Naval Medical Research Institute.

Hoban, who owns and operates Friendship Pet Hospital in Fountain Hills, Arizona, looks forward to returning to campus to experience the new and innovative facilities serving current students.

Margie Lee (DVM '86)

A professor at the University of Georgia College of Veterinary Medicine for more than 25 years, medical microbiologist Margie Lee has served as department head and professor in the veterinary college's Department of Biomedical Sciences and Pathobiology since 2018.

After earning a B.S. in biology at Virginia Tech and then her DVM, Lee went on to complete an M.S. and a Ph.D. in medical microbiology at the University of Georgia.

Lee says that she is proud to be part of the first endowed scholarship specifically supporting underrepresented students, which demonstrates the college's commitment to inclusion and diversity.

Mario Dance (DVM '90)

A clinical research veterinarian overseeing animal care in the Division of Animal Resources at Virginia Commonwealth University, Mario Dance plans to retire from that role in December.

For two decades, Dance has also served as a consultant veterinarian providing animal care and research guidance for Virginia State University, Randolph-Macon College, University of Richmond, and the Hunter Holmes McGuire VA Medical Center. Upon his retirement, he will continue in that role and will shift into full-time ministry with his church.

After earning an undergraduate degree at Virginia Tech, Dance served as freshman class president and vice chair of the Omega Tau Sigma service fraternity at the veterinary college. Having used a loan package to overcome the financial barrier of a veterinary education, he feels certain that access to such a scholarship would have made a significant difference when he was a student.



THE LONG-LASTING TRADITION OF PHILANTHROPY

At age 9, Matt Lager assisted the veterinarian who performed surgery on his prized show cow. From that day on, his goal was to become a food animal veterinarian.

After graduating from the veterinary college in 1996, Lager joined Mid-Maryland Dairy Veterinarians in Hagerstown as a food animal veterinarian specializing in bovine embryo transfer. These days, he splits his time between the Hagerstown practice and MD-West-View Genetics, his embryo donor facility where his wife, Laura, and their children, Noah and Brooke, assist with the facility's operations.

"The veterinary college has truly given me the opportunity, tools, and skills needed to successfully live out my dream with the Veterinarian's Oath in my daily walk," Lager said. "I thoroughly enjoyed my four years in Blacksburg, and all of those experiences helped me to mature as a person and teach the concepts of community, service, and giving."

“My gifts to the veterinary college are a small thank you for the opportunities it has provided me, as well as a way to recognize outstanding students in the food animal area.

– Matt Lager (DVM '96)

Although Lager's parents had taught him and his brothers to always work hard and give generously, his philanthropic sights were set especially high when, as a senior at the veterinary college, he received the Robert L. Hogsett Memorial Award, which honors leadership, professionalism, and proficiency in clinical veterinary medicine.

Every year since graduation, Lager has given at the level he was able to, supporting various projects at the college. In 2014, he initiated the creation of the Dr. Matt Lager Veterinary Scholarship in Food Animal Medicine, completing the endowment in 2019. The scholarship provides support to fourth-year students in the food or mixed animal medicine track, with preference given to students with a particular interest in dairy production medicine.

"My gifts to the veterinary college are a small thank you for the opportunities it has provided me, as well as a way to recognize outstanding students in the food animal area," Lager said. "They help to inspire other generous people in their daily journeys by planting a seed that continues the long-lasting tradition of philanthropy."

Assisting first-generation veterinary students

The generosity of the wider veterinary college community—the very heartbeat of the college—continues to ease the way for veterinary students now and in the future.

Exemplifying that giving spirit are Blacksburg residents Betty McClellan and Michael Owens, who are establishing the McClellan Owens Family Pet Veterinary Scholarship, an endowed scholarship to benefit first-generation veterinary students with demonstrated financial need.

“Education for even one person in a family can change the economic situation for future generations of that family,” said McClellan, who, with Owens, is genuinely excited to be able to provide opportunities to the college’s students.

Although McClellan and Owens do not have children, they have had many pets that they treasured like kids. Over the years, they have been moved by the extraordinary care their pets received from veterinarians: from closing an office to perform an emergency surgery to driving an hour to be at their home when it was time for their beloved Newf to be euthanized.

The compassion and care shown by their veterinarians guided the couple’s

decision-making surrounding their estate plan. Committed to ensuring their estate would be as helpful as possible to both people and animals, McClellan and Owens realized that a scholarship fund, which would help reduce financial burden and allow veterinary students to focus on preparing for the career they dreamed of, was a perfect fit.

A two-time alumna and former employee of Virginia Tech, McClellan is proud to be part of the university community. Upon retirement, the couple moved back to Blacksburg to enjoy both small-town life and the amenities afforded by a large research university, including access to world-class veterinary care, uncommon in a small town.

When they discovered that the home next to theirs was rented almost exclusively by veterinary students, the relationships they formed with the students and their pets gave them deep insight into the students’ struggles—and put a face to the importance of giving back.

“We certainly can’t take the money with us,” McClellan said, “but we can continue to make a positive impact for years to come.”

Betty McClellan and Michael Owens with their dogs, Rowdy and Bandit



THE COLLEGE

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ARE YOU IN?

For 24 hours, alumni, students, faculty, staff, families, and friends have the opportunity to come together and make a powerful, joint impact on the future of Virginia Tech. Gifts of any size on Virginia Tech's Giving Day can make a big difference.



AROUND THE COLLEGE

LIVING DONOR

SAVES CO-WORKER



Four years ago, a casual hallway conversation between “work buddies” Brian Huddleston and Heather Parrish evolved into a life-transforming journey.

“I remember Brian once mentioning that he had a genetic kidney disorder,” said Parrish, formerly an administrative assistant at the college who now works at Virginia Tech’s Institute for Policy and Governance.

At the time, Huddleston had assured Parrish that the disease seemed to be under control. But a bout of Henoch-Schonlein purpura, or HSP, in early 2019 led to a hospitalization and hemodialysis. After discharge, Huddleston said, “I had to spend three days a week hooked up to a machine just to stay alive.”

During his illness, Huddleston continued sharing updates on his Facebook page. Although Parrish had left her position at the veterinary college, she saw the posts and knew what had to be done.

She reached out to the transplantation team at the University of Virginia (UVA) and began the arduous process of match testing. Parrish and Huddleston shared a blood type and had compatible antibodies. When further testing revealed that her kidneys were in tip-top shape, the surgeries were scheduled for March 2020.

“I had two healthy kidneys. Brian didn’t have any. I knew he needed help, and I was in a position to help.” - Heather Parrish

While much of Huddleston’s care was covered by insurance, trips to UVA and other expenses were not. The staff association at the veterinary college stepped in to help. Tami Quesenberry, a licensed veterinary technician, co-chaired a fundraising effort that raised nearly \$10,000 for Huddleston, bringing “members of this great big veterinary family together like never before,” she said.

Because of the COVID-19 pandemic, the surgery date had to be rescheduled for May 14. Despite the stress of pandemic restrictions, the surgeries went smoothly.

“I didn’t realize how sick I’d been until I felt well,” Huddleston said. For her part, Parrish is nonchalant about the magnitude of her gift. “For me, this was a no-brainer,” she said. “I had two healthy kidneys. Brian didn’t have any. I knew he needed help, and I was in a position to help.”

Around the world with Capt. Dodd

Veterinarian Lauren Dodd (MPH ’19, M.S. ’19) has worked at a spay/neuter clinic in Nicaragua, traveled door-to-door in Malawi to vaccinate animals against rabies, studied food security in South Africa, and improved goat health in Haiti.



Back in Blacksburg at the veterinary college, Dodd was a resident in comparative nutrition whose MPH capstone project—the “Fat Cat Study,” which was picked up by media outlets nationwide—examined how perceived quality of life for obese cats changes over the course of a weight-loss regimen.

“Lauren took advantage of every opportunity that was offered during her program and was able to apply what she learned during her clinical nutrition veterinary residency,” said

HONORING OUR NEWEST ALUMNI

On May 15, the Virginia-Maryland College of Veterinary Medicine proudly conferred 123 DVM degrees, 31 MPH degrees, including 10 dual DVM/MPH degrees, and two M.S. degrees in biomedical and veterinary sciences at its spring commencement.

A virtual ceremony planned by a committee led by DVM Class of 2020 president Carli Williams and created by Andrew Mann, the veterinary college's digital content producer, featured all aspects of a traditional DVM commencement: Introductory music was performed by associate professor Thomas Cecere and Professor Emerita Marion Ehrich, marking her 35th DVM commencement performance. Commencement speaker

Kevin Lahmers, clinical associate professor, presented a unique series of vignettes at locations throughout the college. Jennifer Hodgson, associate dean of professional programs, read each graduate's name, while assistant professor Timothy Bolton, who received the Class of 2020's Outstanding Instructor Award, led a ceremonial hooding.

Along with the virtual ceremony, which was made available at exactly 7:30 p.m., class historians Chelsea Bond and Kelsie Mullikin gathered the class's favorite photos for a commemorative slideshow.

» Go to www.vetmed.vt.edu/commencement.asp to watch the videos, read the stories, and relive the special moments.

Kathy Hosig, associate professor and director of the Center for Public Health Practice and Research in the Department of Population Health Sciences (DPHS). "The MPH program was a perfect fit for her interest in working in global health and the military. I believe that it gave her an advantage in her quest for a military appointment."

On Feb. 20, while serving as a DPHS research associate in epidemiology, Dodd was commissioned as a captain in the U.S. Army Veterinary Corps—at a ceremony hosted by the veterinary college. Upon commissioning, Dodd carried on a family legacy of military service: Her grandfather was a medic in World War II and her father served in the U.S. Army Reserve.

This past summer, Dodd left Blacksburg for training at Fort Still and at Fort Sam Houston, after which she'll be stationed at Fort Knox for three years. She hopes to continue her work in global outreach in developing areas.

"Coming to the veterinary college, doing my residency, doing my MPH, helped set me on a good path," Dodd said. "I'm looking forward to exploring new avenues in the military."

DVM valedictorian Pouliot receives Talbot Award

A student in the mixed animal track, Class of 2020 valedictorian Catherine "Kate" Pouliot was presented with the Richard B. Talbot Award—named for the college's founding dean—at the DVM program's virtual commencement in May.

Pouliot, who completed a B.S. in animal science from the University of Maine, was drawn to the veterinary college because of its new curriculum, introduced in 2016, that enables practical experience sooner.

Degree in hand, Pouliot headed to Texas A&M University to complete a small animal rotating internship, aiming for a cardiology residency afterward. "I'd love to be able to give back through mentoring," she said, "because I've had such great mentors here."



Catherine Pouliot (DVM '20)



April Gardner (DVM/MPH '20)

Gardner named Outstanding Graduating Student

April Gardner, the Class of 2020's Outstanding Graduating Student, always wanted to be a veterinarian. While studying biology at St. John's University, she worked part-time teaching middle school students about animal husbandry to stay connected to the animal world.

A graduate of the college's dual DVM/MPH program, Gardner admits that her heart belongs to small animal medicine, but she entered the mixed animal track because of its flexibility and dynamic One Health approach.

"My focus in the MPH program was infectious disease," said Gardner, who moved to Seattle to work at a small animal clinic. "It's estimated that 50 percent of emerging diseases are zoonotic diseases, so there's definitely a relationship among animals, humans, and public health. We can't consider human health without bringing animals into the conversation."

AROUND THE COLLEGE

College researchers earn recognition from Virginia Tech Graduate School

Although Virginia Tech's annual Graduate Education Week and awards dinner were canceled on the heels of the COVID-19 outbreak, the Graduate School recognized the university's master's and Ph.D. students, along with faculty mentors, with awards of excellence.

While students were nominated for the awards by Virginia Tech's eight colleges, faculty mentors were nominated by graduate students and faculty across the university.

Outstanding Doctoral Degree Student Bruno Menarim (Ph.D. '19), Outstanding Master's Degree Student Giulio Menciotti (Ph.D. '17, M.S. '20), and Outstanding Faculty Mentor Irving Coy Allen were among those honored for service, teaching, research, academic performance, and mentoring.



THANK YOU,
MOOSE

In honor of his faithful service as a full-time therapy dog with Virginia Tech's Cook Counseling Center for more than five years, Moose Davis, an 8-year-old Labrador retriever, was recognized with a Proclamation of Appreciation from the veterinary college.

Moose, the Virginia Veterinary Medical Association's Animal Hero in 2019, has helped to reduce stigma around mental health and to encourage struggling students to seek help.

Alongside counselor Trent Davis, coordinator of the university's Animal-Assisted Therapy program, Moose has participated in more than 7,500 therapy sessions with students and facilitates the "Moose Group," a meeting for students with mental illness, many of whom would not attend if not for the retriever's calming presence.

To provide support specifically to veterinary students, Moose has spent three days a week on-site at the veterinary college and participated in the symbolic hooding ceremony during virtual commencement proceedings for the DVM Class of 2020.

From left: Dean M. Daniel Givens, Virginia Tech counselor Trent Davis, and associate dean Jennifer Hodgson presented Moose with a Proclamation of Appreciation.



Kent Scarratt



W. Edward Monroe

Scarratt and Monroe honored with emeritus status

In recognition of exemplary service to the university, two longtime professors at the veterinary college were conferred emeritus status by the Virginia Tech Board of Visitors.

As one of the original faculty members in the newly founded College of Veterinary Medicine, Kent Scarratt, Associate Professor Emeritus of Large Animal Medicine, has made considerable contributions to the college's success since 1982. A skilled veterinary clinician and diagnostician in the Veterinary Teaching Hospital, he taught thousands of students, trained dozens of residents and interns, and provided veterinary support for research projects that helped advance the understanding of infectious diseases affecting food animals.

A member of the Virginia Tech community since 1986, W. Edward Monroe, Professor Emeritus of Internal Medicine, specialized in small animal medicine and endocrine diseases. His extensive research portfolio, peer-reviewed publications, and leadership positions in professional organizations brought significant attention to the university and the veterinary college. Director of the Veterinary Teaching Hospital's intensive care unit and chief of small animal medicine for a decade, Monroe taught countless students and clinical house officers, but is perhaps most admired for his dedication to advancing equity and accessibility at the university and within the veterinary profession. He chaired the college's Community and Diversity Committee and the American Association of Veterinary Medical Colleges' Diversity Committee, and was faculty advisor for the college chapter of Veterinary Students as One for an Inclusive Community for Empowerment, or VOICE.

Wilcke receives lifetime achievement award

Jeff Wilcke, Metcalf Professor of Veterinary Medical Informatics in the Department of Biomedical Sciences and Pathobiology, was named the 2020 recipient of the Allen W. Hahn Lifetime Achievement Award in Veterinary Informatics from the Association for Veterinary Informatics (AVI). The award honors individuals who have been a leader, educator, and innovator in veterinary informatics.

Presented by Julie Green, special research assistant professor of veterinary medical informatics and a member of the 2020 Hahn Award Committee, the award was announced at the AVI's virtual Talbot Veterinary Informatics Symposium, which is named for the veterinary college's founding dean, Richard B. Talbot, a pioneer in veterinary informatics.



IN MEMORIAM



PAUL GOODNESS

Marion duPont Scott Equine Medical Center farrier Paul Goodness, a humble, kind man with an instinct for treating horses with chronic hoof conditions, died July 21 at the age of 62.

A Certified Journeyman Farrier with the American Farrier's Association, Goodness served as the official U.S. Equestrian Team farrier between 1992 and 1996, culminating his service at the Olympic Games in Atlanta.

Beginning in the late 1990s, Goodness collaborated on a part-time basis with

faculty at the Equine Medical Center to shoe and treat horses with chronic foot issues. In 2016, he embraced the opportunity to become part of the center's vision for a comprehensive podiatry service in collaboration with the sports medicine and rehabilitation teams.

"Paul Goodness was the single biggest influence in my career," said former pupil Travis Burns, associate professor of practice and chief of Farrier Services at the veterinary college. "He was the perfect mentor and willingly shared his knowledge and experiences. His outlook on life, however, had an even bigger impact."



ROBERT MANFUSO

Robert "Bob" Manfuso, a longtime member of the Marion duPont Scott Equine Medical Center Advisory Council and a prominent figure in the thoroughbred industry, died March 19 of natural causes. He was 82.

Always an advocate for the center's research and clinical services, Manfuso had been a pivotal contributor to the council since 2006, sharing his unique

insight and comprehensive knowledge of thoroughbred breeding and racing.

"Bob will be fondly remembered by us all for the depth and breadth of his knowledge of the thoroughbred industry, his love for and innate relationship with his horses, and his wit and generosity of spirit," said Michael Erskine, Equine Medical Center director and Jean Ellen Shehan Professor. "His experience was invaluable to our work here at the center."



Message from the Alumni Society president

In uncertain times, the college is here.

Over the past seven months, many changes have happened in veterinary medicine, public health, and the world. Dealing with COVID-19 has put a strain on us, our families, our colleagues, and our staff. From the increased workload to the uncertainty and fear, the stress level has become overwhelming for many.

Fortunately, in partnership with the Virginia Veterinary Medical Association (VVMA), we now have access to many resources through the Member Assistance Program. And as always, our fellow alumni are a great resource. Each of us has been affected by COVID-19, whether from the disease itself, the increased case load, the changing policies and procedures, or demanding clients. Reaching out to a classmate or colleague to vent or to express your concerns may be helpful.

In this time of uncertainty, our college is uniquely positioned to help. From a wellness standpoint, Trish Haak, the college's licensed clinical social worker, has offered several webinars and discussions to help equip the veterinary community with the resources we need.

More broadly, the pandemic has revealed the significant role our college plays at the intersection of public health, infectious disease, clinical medicine, and research. Through combined efforts with Virginia Tech, the Virginia Department of Health, and other public health entities, the veterinary college is at the forefront of the response to the pandemic, and alumni from all degree programs are serving on the front lines (see page 6 for highlights).

During this 40th anniversary year marking the matriculation of the college's inaugural DVM class, several in-person events had been planned to celebrate this milestone. While these events, including the annual mentor workshop, have been moved online, we still anticipate great impact for students and alumni, and we look forward to connecting our community in this virtual setting.

Mentoring is a fine way to give back to the college and the veterinary community. Another way to contribute to the college's future is by supporting the fix-the-debt initiative with a gift that benefits student scholarships. Currently underway are two important fundraising campaigns: the VVMA Keith de la Cruz Memorial Scholarship, which highlights the importance of discussing mental wellness; and the Hoban, Lee, and Dance Endowed Scholarship (see page 19), which will support underrepresented students. Contributions at any level are a tremendous help and a great way for us to invest in future veterinarians and give back to our alma mater that has given us so much.

Jesper Lorentzen (DVM '04)

CREATING COMMUNITY THROUGH

— — — — > VIRTUAL ENGAGEMENT

January 2021: Equine/Large Animal Continuing Education

PAST EVENTS

November — Public Health and Wellness Virtual Continuing Education Series and Presentation of Alumni Awards

October-November — Small Animal Continuing Education; Virtual Reunions

July — Alumni Virtual Gathering

May — Animal Cancer Care and Research Center Continuing Education; COVID-19 Expert Panel; Wellness Continuing Education; Coronavirus Disease 2019 (COVID-19): Healthcare Associated Guidance for Animal Healthcare Providers

April — Coronavirus Disease 2019 (COVID-19): Healthcare-Associated Guidance for Animal Healthcare Providers

CONNECT2020 GOES VIRTUAL

Although big plans for this fall's Connect2020 were altered by the pandemic, two continuing education series have been delivered online, with the third planned for January 2021.

Academic Affairs hosted a virtual career fair in September, and the VVMA carried out its traditional Mentor Day activities via Zoom gatherings between mentors and their mentees.

Reunion events were also held online, and seven virtual reunions were hosted in October and November for the DVM classes of '85, '90, '95, '00, '05, '10, and '15.

Despite the inability to hold our landmark event in person, the unity and connectedness we had hoped for was achieved!

NEW ALUMNI BOARD MEMBERS

Welcome to our newest members of the Alumni Board. Thank you for your service!

Courtney Conroy (DVM '17)
Sharon Franklin (DVM '85)
Melinda McCall (DVM '04)
Renee Sykes (DVM '93)

Cindy Driscoll '87 and Karen Meidenbauer '16 named college's distinguished alumni award winners

LIFETIME ACHIEVEMENT ALUMNI AWARD

Before beginning studies at the veterinary college, Cindy Driscoll (DVM '87) worked as a biological technician at the Patuxent Wildlife Research Center in Laurel, Maryland, where she was the only woman on staff. The experience cemented her passion for wildlife conservation, steered her veterinary studies, and set her on a path to become a master at juggling multiple responsibilities.

While pursuing her DVM, Driscoll was a research fellow, studying aflatoxin in avian populations. Upon graduation, she held positions in wildlife research at several organizations concurrently. When a troubling number of stranded bottlenose dolphins appeared on the East Coast, Driscoll worked with the Maryland Department of Natural Resources (DNR) to design and launch the Mid-Atlantic Marine Mammal and Sea Turtle Stranding Response Network.

The first wildlife veterinarian east of the Mississippi, Driscoll has been the director of the Fish and Wildlife Health Program and the state fish and wildlife veterinarian for the Maryland DNR since 1999. In that capacity, she advises a range of organizations, including The Smithsonian and the Department of Homeland Security, serving since 2007 as a consultant on biological agents.

In recognition of her years of service, Driscoll was awarded the Outstanding Wildlife Professional Award in 2017 by the Maryland-Delaware Chapter of the Wildlife Society.

Dedicated both to the well-being of wildlife and to the future of veterinary medicine, Driscoll is a frequent guest lecturer at several East Coast universities and holds faculty positions at multiple universities, including the AQUAVET® program in aquatic veterinary medicine at Cornell University.

"I am truly honored to be chosen from many accomplished VMCVM graduates," Driscoll said. "I have been fortunate to have an incredibly rewarding career and an amazingly supportive family."



Cindy Driscoll (DVM '87)



Karen Meidenbauer (DVM/MPH '16)

OUTSTANDING RECENT ALUMNI AWARD

Karen Meidenbauer (DVM '16, MPH '16), who earned a B.S. in biological sciences at Virginia Tech before entering the veterinary college, embodies the university's motto, *Ut Prosim* (That I May Serve), in her One Health approach to her responsibilities.

A senior veterinarian and project manager for the Johns Hopkins University Applied Physics Laboratory, Meidenbauer also works as a companion animal veterinarian at Hickory Veterinary Hospital in Forest Hill, Maryland, her home state.

"I have directly seen the tremendous impact that VMCVM graduates are making across all aspects of veterinary practice and am proud to be counted among them." - Karen Meidenbauer (DVM '16, MPH '16)

At Johns Hopkins, Meidenbauer applies animal health data to surveillance technology and examines risk factors for zoonotic transmission and other public health risks. Recently, she has led multiple projects that contribute to the fight against COVID-19, developing protocols and tools and analyzing supply chains.

"I have directly seen the tremendous impact that VMCVM graduates are making across all aspects of veterinary practice and am proud to be counted among them," said Meidenbauer, who is a prime example of the flexibility that a veterinary medicine degree can provide.

"In my public/corporate track classes, Dr. Valerie Ragan would often remind us that veterinarians bring a unique and valuable perspective to many world problems, and the opportunities to contribute with a veterinary degree are endless," Meidenbauer said. "This has become something of a mantra for me in my professional career at the Applied Physics Laboratory, where I have worked on projects as wide-ranging as health surveillance, to medical supply chains, to canine decontamination."



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In early fall, Laura Hungerford, head of the Department of Population Health Sciences and professor of veterinary public health and epidemiology, joined the Public Health Program's COVID Crushers, a student-organized group that shares information and distributes masks and hand sanitizer in downtown Blacksburg on Friday evenings. Photo by Teagan Neveldine

