

SCOPE'S

FROM STETHOSCOPES
TO MICROSCOPES
TO THE SCOPE OF THE COLLEGE

FOOD AND PUBLIC HEALTH SPRING 2016



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College of Veterinary Medicine

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Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities. Produced by Cornell University 4/16 FLP 6.5M

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COVER: A SENEGALESE MAN WASHES HIS DONKEY IN A SALT-WATER ESTUARY NEAR THE TOWN OF JOAL-FADIOUTH. PHOTO: CECELIA MADSEN

THIS PAGE: A KENYAN WOMAN INSPECTS A VILLAGE RABBIT FARMING FACILITY. PHOTO: DR. SERA YOUNG



SCIENCE AND THE PUBLIC SPHERE

Dr. Lorin Warnick,
Interim Dean of Veterinary Medicine



“FOR THE COLLEGE TO HAVE THE GREATEST IMPACT, WE NEED TO ENGAGE NOT ONLY IN SCIENTIFIC DISCOVERY, BUT ALSO TAKE PART OURSELVES, AND PREPARE OUR STUDENTS TO PARTICIPATE, IN THE MESSY AND CHALLENGING PUBLIC SPHERE.”

As many of us closely watch and react to the political drama of an election year, I'd like to reflect on how that world affects us here at the Cornell University College of Veterinary Medicine. The work we do in furthering learning, discovery, and care may often seem disconnected to the machinations of the government, but it's important to note that our efforts do not proceed in isolation from these myriad of influences. Political decisions establish funding priorities, areas of research go in and out of fashion, personalities and rivalries play a role, policy makers, regulators and business interests all come into play, to name a few examples. What does this mean for the College?

Let's look at the story of Daniel Salmon, the first veterinary graduate from Cornell in 1872, and his role in identifying the bacterial genus that subsequently bears his name. He also served as chief of the Bureau of Animal Industries (BAI), established within the USDA in 1884, which he led for 20 years. As described by in the recent book, *Arresting Contagion: Science, Policy, and Conflicts over Animal Disease Control* by Alan L. Olmstead and Paul W. Rhode, the identification of the *Salmonella* bacterium occurred during the investigation of hog cholera, a devastating swine disease prevalent in the United States throughout most of the 1800s and midway through the last century.

Salmon and his coworkers incorrectly attributed hog cholera to the bacterium they identified and persisted in this view for many years, despite challenges and heated disagreement. Commissions were established to settle the controversy, but progress was limited until other BAI scientists obtained ceramic filters from Pasteur's laboratory in Paris and showed that hog cholera was caused by a filterable agent. To his credit, based on this new evidence, Daniel Salmon recognized the error of his prior conclusion and set the bureau on a path of using this knowledge to control hog cholera.

This is to say, that as much as we emphasize objectivity in academia, we cannot deny that the views of the public and our policy makers are inextricably connected to what we do as an institution. So where does that leave us?

First, we should recognize and preserve the unique value of research and education conducted at a public, non-profit institution, particularly as part of a land-grant school with a mission of discovering and disseminating new knowledge. We are not, and should not be, entirely insulated from external influences, but we are afforded an exceptional degree of independence in our work. As noted by Olmstead and Rhode, this kind of intellectual independence of laboratories within BAI allowed scientists the freedom to pursue new avenues of research and overturn past dogma.

Secondly, for the College to have the greatest impact, we need to engage not only in scientific discovery, but also take part ourselves, and prepare our students to participate, in the messy and challenging public sphere. This issue of 'Scopes' focuses on a number of the College's public and global health initiatives. Whether addressing issues ranging from food insecurity in developing countries, drug use decisions and compliance in clinical practice, or wildlife conservation projects, our success depends on effectively navigating the intersection of scientific knowledge, human behavior, economic impacts, politics, policy, and regulation.

As a college, we are committed to providing an independent, reliable voice in this process. From tracking new strains of canine influenza in the United States; to introducing improved aquatic medicine practices in Asia; to informing the debate on how best to block antimicrobial resistance, we're constantly striving to improve health for animals, people, and the public.

Now, read on to learn more about global and public health activities in the College of Veterinary Medicine—and then we'll let you get back to those political headlines.

Lori D. Warnick



Remembering President Garrett

On March 6, 2016, the Cornell community was struck by tragedy; President Elizabeth Garret, who was in her inaugural year as leader of the university, passed away after a battle with colon cancer. The news has shocked and saddened everyone at the College of Veterinary Medicine, where Garrett had reached out to forge connections with faculty, staff, and students.

She made lasting impressions during her tour of the College when she visited the Cornell University Hospital for Animals; the Animal Health Diagnostic Center; several research laboratories; new teaching spaces; and the Baker Institute of Animal Health.

“We were fortunate to have President Garrett visit the College last fall and were all impressed with her infectious enthusiasm, energy and engagement as she met with many of our veterinary and graduate students, faculty and staff,” says Interim Dean Lorin Warnick. “Just over a month ago she warmly welcomed new faculty, including several from our college, to a reception in her home. We will sorely miss her and extend our condolences to her husband and family.”

“Beth was an inspiring and visionary leader who continually raised the bar for all of us at Cornell as we charted the university’s future together,” says Michael Kotlikoff, Cornell provost. “Her greatest legacy will be for this generation of Cornellians—faculty, students and staff—to build on Beth’s fearless dedication to discovery and learning, and her incredible energy to make her vision for Cornell University’s future a reality.”



POULTRY VACCINE NETS EZRA TECHNOLOGY INNOVATOR AWARD

By Krishna Ramanujan

(A different version of this story was originally published in the Cornell Chronicle)

Two College emeriti received the 2015 Ezra Technology Innovator Award for their work as co-inventors of the Marek's disease vaccine. Currently, 22 billion doses of vaccines that treat various strains of Marek's disease are administered annually to chickens in commercial production, of which Cornell's vaccine is the most used.

On October 22, Provost Michael Kotlikoff, former dean of the College of Veterinary Medicine, presented the award to Bruce Calnek, DVM '55, the Steffen Professor Emeritus of Veterinary Medicine, and Karel Schat, PhD '78, professor emeritus in the Department of Microbiology and Immunology.

The innovator award is given every two years to recognize inventors whose technologies have been widely used in products and services, achieved significant social impact, and generated financial returns for Cornell. "We try to recognize inventors whose technologies have made a big societal impact that touch people's lives," says Alice Li, interim executive director of the Center for Technology Licensing at Cornell University.

Marek's disease is found in virtually all commercial chicken-producing areas around the world. It causes tumors in the nervous system and other internal organs. To combat this disease, veterinarians and poultry farmers administer billions of doses of Marek's disease vaccines annually. A majority of these vaccines contain the SB-1 strain isolated by Calnek and Schat and patented at Cornell.

"WE TRY TO RECOGNIZE INVENTORS WHOSE TECHNOLOGIES HAVE MADE A BIG SOCIETAL IMPACT THAT TOUCH PEOPLE'S LIVES."

—Alice Li



DR. LUIS M. SCHANG

DR. LUIS SCHANG NAMED AS NEW HEAD OF BAKER INSTITUTE AND FELINE HEALTH CENTER

Dr. Luis M. Schang, a virologist at the University of Alberta, Edmonton, will be the next director of the Baker Institute for Animal Health and Cornell Feline Health Center in the College of Veterinary Medicine at Cornell University. Schang's appointment becomes effective August 1, 2016.

Currently a professor of biochemistry with a cross-appointment in the Department of Medical Microbiology and Immunology, Schang studies the roles of cellular proteins, lipids, and glycans in viral infection, replication, and pathogenesis with an interest in finding new therapeutics against infectious disease. His recent work focuses on the entry of extracellular virions into cells.

Schang earned his Médico Veterinario from the School of Veterinary Sciences at the National University of Buenos Aires and a PhD in molecular virology from the Department of Veterinary and Biomedical Sciences at the University of Nebraska-Lincoln. He is a member of the American Society for Microbiology and the International Society for Antiviral Research, serves on the editorial boards for *Antimicrobial Chemistry and Chemotherapy*, the *Journal of Virology* and *Antiviral Research*, and is an editor for *Virology Journal*.

"We are excited to have Dr. Schang join the College of Veterinary Medicine," says Interim Dean Lorin Warnick. "His research program will be a great fit for the strategic goals of the Baker Institute, and we look forward to his further success in this work as well as his leadership as director."

**“IT’S HARD WORK, BUT I’D
DO IT ALL OVER AGAIN.
IT’S BEEN A GREAT RIDE.”**

—Steve Kraus

HALL OF FAME FARRIER

Cornell Head Farrier Steve Kraus was inducted into the International Horseshoeing Hall Of Fame in Louisville, Kentucky on February 4, 2016. The Hall honors farriers around the world who have made significant contributions to the profession. Nominations are submitted by peers, trainers, veterinarians, horse owners, friends and family members, and winners are chosen by current Hall members.

Kraus first began horseshoeing as an undergraduate at Cornell, and eventually became head of the Cornell Farrier Program. In this role, Kraus teaches his students the theory behind basic and corrective horse shoeing and hoof trimming; therapeutic methods; splint fabrication and more, followed by hands-on practice under his supervision. He travels and lectures about horseshoeing topics nationwide. Kraus also runs an annual Farrier Conference, now in its 32nd year. Professionals from across the U.S. attend to learn the latest techniques as well as the time-honored crafts of blacksmithing and tool making, taught by experts.

Kraus has no plans to retire anytime soon. “It’s hard work,” he acknowledges, “but I’d do it all over again. It’s been a great ride. I never intended to be where I am. I just jumped on this train and it never stopped—one good opportunity led to another. And it’s gone by so fast.”



CORNELL HEAD FARRIER STEVE KRAUS



“WE HAVE WORLD-CLASS EXPERTS WITHIN THE COLLEGE WORKING IN AREAS RELATING TO ONE HEALTH, TRANSLATIONAL MEDICINE, EPIDEMIOLOGY, POPULATION MEDICINE, INFECTIOUS DISEASE, FOOD SYSTEMS, AND HUMAN-ANIMAL DYNAMICS; IN MANY WAYS, PUBLIC HEALTH IS BOTH THE HISTORY AND HEART OF THE VETERINARY PROFESSION.”

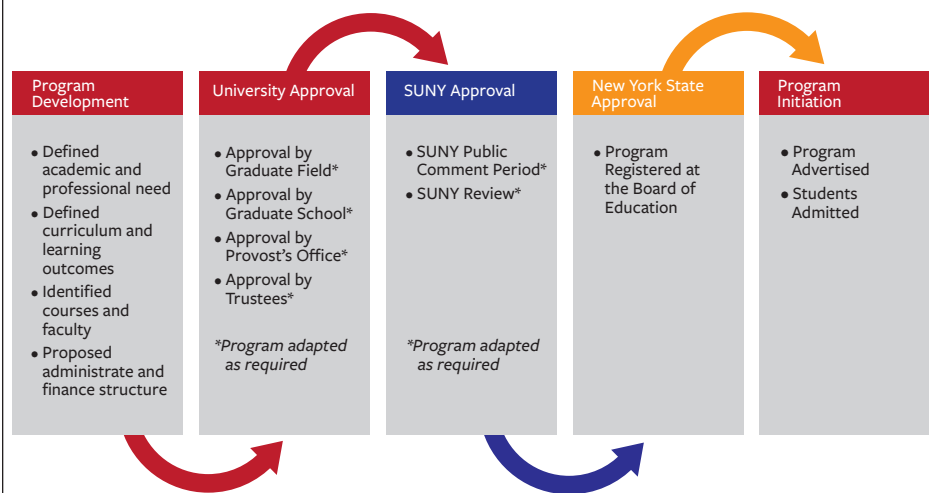
—Gen Meredith

CORNELL'S MASTER OF PUBLIC HEALTH PROGRAM AWAITS FINAL APPROVAL

Cornell University's College of Veterinary Medicine is working with Cornell administration, other Cornell colleges, and the State University of New York (SUNY) system to develop a campus-wide Master of Public Health (MPH) program. This degree is not currently offered at Cornell. If approved, Cornell University's MPH will be offered by the Graduate School and implemented by faculty and staff from many of the Cornell's colleges; the College of Veterinary Medicine will provide substantial leadership, administrative, teaching, and student mentoring support. “The College looks forward to sharing its expertise with a broader group of students, particularly in the public-health-related areas where our faculty excel,” says Gen Meredith, associate director for international programs and the MPH program. “We have world-class experts within the college working in areas relating to One Health, translational medicine, epidemiology, population medicine, infectious disease, food systems, and human-animal dynamics; in many ways, public health is both the history and heart of the veterinary profession.”

Because many of the colleges that will contribute to the MPH program are a part of the SUNY system—including the College of Veterinary Medicine—there are several steps required before a new graduate degree can be advertised or offered (see below). Currently, Cornell's MPH program proposal has successfully passed each of the milestones that are internal to Cornell, and now has one final step to clear—at the New York State Board of Education—before the program is approved.

“If approved, this program will provide a public health competency-based education to students of diverse backgrounds. From within the College, we are excited to be able to offer this degree option to our DVM and PhD students, graduates, peer veterinarians, and new students,” says Meredith. “These students will get the opportunity to study the practice of public health from a One Health and trans-disciplinary approach, and to be in a stronger-yet position to contribute substantially to local, national, and global health.”



STEPS IN NEW GRADUATE DEGREE APPROVAL FOR SUNY-AFFILIATED UNIVERSITIES

CAPITAL EXPANSION UPDATE

Renovations at the College continue on schedule with phase one completed and phase two successfully underway. Students, faculty, and staff are already using the brand-new tutorial rooms along the polished, yellow-hued E-wing of Schurman Hall. Each room is equipped with a large touch-screen whiteboard allowing users to annotate on-screen images or navigate a website with just a finger. Wireless display capabilities are also available, giving users the ability to share and project their devices' screen to the touch-screen whiteboard to enable better collaboration.

This spring hails the beginning of major construction in many areas, including the new library wing and the veterinary research tower (VRT). The VRT's old glass wall, (which had substantial issues with energy efficiency, safety, and leaking) is being dismantled and removed. It will be replaced by a



more energy-efficient façade comprised of reflective glass and shade devices to help mitigate heat glare.

Additionally, the new Community Practice Service building, which will serve

the local community as a general clinic while also providing valuable training to students, is currently in its design phase and construction is slated to begin shortly.



"THAT'S REALLY DISHEARTENING. ONE OF THE FEW SHOWS WITH QUALITY CONTENT AND STORIES."

"VERY SAD. MY 7 YEAR OLD DAUGHTER WANTS TO BE A VET. SHE ABSOLUTELY LOVES THIS SHOW AND HAS LEARNED SO MUCH. IT HAS TRULY INSPIRED HER. THANK YOU FOR THAT."

NO SECOND SEASON FOR VET SCHOOL

Fans' hopes were dashed late last year when Nat Geo WILD made the decision to forgo a second season of Vet School, the docu-series based on and filmed at Cornell's College of Veterinary Medicine. Interim Dean Lorin Warnick made the announcement to the College, noting that "the show captured the rigorous intellectual and physical work students perform to earn a DVM . . . By providing viewers with an inside look at our world, Vet School helped raise the public's awareness of CVM and the veterinary profession."

The series, which premiered online and on-air September 19, 2015, generated much excitement at the College, Cornell University, and among viewers. When the news of its cancellation broke on social media, fans of the show expressed their disappointment—and fondness—for the series.

"BEST VET MEDICINE SHOW OUT THERE!"

Fans, family, and friends of the show and its stars can take comfort in the fact that the series still lives on and can be re-watched through a cable subscription; electronic sell-through (EST) platforms (e.g. iTunes, Amazon, Google Play, Sony PSN, Vudu, Xbox); and re-runs on Nat Geo WILD.

Who's new at the College

The College welcomes several new faculty members to our research, clinical, and teaching community. These are the faculty who have joined during August 2015 to January 2016:



DR. SERA YOUNG



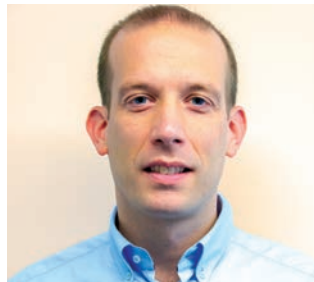
DR. RENATA IVANEK



DR. GUNTHER HOLLOPETER



DR. CAROLYN ADLER



DR. ROMAIN PARIAUT



DR. HEIDI REESINK



DR. KARINE GENDRON



DR. KATHRYN MCGONIGLE



DR. EMMA DAVIES



DR. PHILIPPA JOHNSON

DR. SERA YOUNG: Young has joined the Department of Population Medicine and Diagnostic Sciences as an assistant professor of global health and nutrition. She received her undergraduate degree in anthropology at the University of Michigan. Methodologically, she draws on her training in medical anthropology (MA, University of Amsterdam) and international nutrition (PhD, Cornell) to take a biocultural approach to improving maternal and child nutrition and health. Her specific areas of interest include the impacts of food insecurity on maternal and child health, especially infant and young child feeding, animal source foods, the prevention of maternal-to-child transmission of HIV, evaluative ethnography, and pica, or non-food cravings. Currently, she has ongoing NIH-funded studies in Tanzania, Kenya, and Uganda. She is the author of more than 40 publications, and the book, “Craving Earth” for which she received the Margaret Mead Award.

DR. RENATA IVANEK: associate professor of epidemiology in the Department of Population Medicine and Diagnostic Sciences, Ivanek examines the epidemiology and public health of infectious and foodborne diseases. Her focus involves mathematical modeling of infectious diseases, spatial analyses of landscape and weather data, statistical modeling, risk assessments and design of observational studies and controlled trials. She received her DVM at the University

of Zagreb in Croatia; her Masters in veterinary epidemiology at the Royal Veterinary College and London School of Hygiene and Tropical Medicine, University of London; and her PhD in comparative biomedical sciences at Cornell.

DR. GUNTHER HOLLOPETER: Hollopeter has joined the Department of Molecular Medicine as an assistant professor. Previously, he did his undergraduate studies at the University of Washington in Seattle, and began his research career there, studying the neuronal basis of appetite control in mice. For his graduate work, he entered the neuroscience program at the University of California, San Francisco, where he isolated the target of the clot-busting drug Plavix. For his postdoctoral training, Gunther moved to the University of Utah and later to the Stowers Institute, where he initiated projects to study basic cell biology in vivo. His lab at Cornell seeks to understand the inner workings of the cellular machines that engulf tiny fragments of the plasma membrane. This process, termed endocytosis, is employed by all cells to internalize extracellular material, restructure signaling platforms and counterbalance membrane expansion. To probe the function and mechanism of endocytosis in the context of an animal, his lab employs a combination of genetic, biochemical and imaging techniques in the nematode, *Caenorhabditis elegans*.

DR. CAROLYN ADLER: Adler works in the Department of Molecular Medicine as a research professor. She attended undergrad at Wesleyan University, after which she worked at Harvard Medical School for a couple of years before starting graduate school in biochemistry at the University of California, San Francisco, where she studied the development of the nervous system. Adler conducted her postdoctoral training at the University of Utah and the Stowers Institute in Kansas City, during which she studied regeneration in aquatic flatworms. “These are remarkable animals that can regrow all of their organs after amputation,” says Adler. At Cornell, she will continue studying the mechanisms of regeneration.

DR. ROMAIN PARIAUT: Pariaut is an associate professor and section chief of cardiology. He received his DVM at the École nationale vétérinaire de Lyon, in Marcy l’Etoile, France, where he also completed an internship in small animal medicine and surgery, and a specialty internship in emergency and critical care. He then served as an instructor in the emergency service for one year. Pariaut pursued a residency in cardiology at Cornell, and later taught and worked at the University of California, Davis, and Louisiana State University’s school of veterinary medicine. Throughout his academic career, Pariaut has focused on the mechanisms and treatments cardiac arrhythmias, specifically in dogs. His current research aim is to adapt implantable defibrillators to dogs—the devices, commonly referred to as ICDs, are currently only designed for humans, and thus require placement and programming adjustments so that they can be used to help canines with life-threatening heart conditions. He is also currently developing an electrophysiology catheterization lab to offer the most advanced treatments available for heart rhythm disorders to veterinary patients.

DR. HEIDI REESINK: Reesink has joined the faculty as assistant professor of large animal surgery. She received her veterinary medical degree from the University of Pennsylvania prior to completing an internship in large animal surgery and critical care at New Bolton Center. Following large animal surgical residency training at Cornell, Reesink achieved diplomate status in the American College of Veterinary Surgeons. She recently obtained her PhD investigating the role of lubricin and galectins in equine osteoarthritis. Her clinical interests include orthopedic surgery, equine sports medicine, lameness and emergency surgery. Reesink’s research aims to unravel basic mechanisms underlying the development of orthopedic disease and to pioneer innovative therapies for the treatment of joint injury and arthritis in both horses and humans. She is interested in translating novel research discoveries, including regenerative medicine, stem cell therapy, and lubricin therapy, to improve the wellbeing of equine athletes with musculoskeletal injuries.

DR. KARINE GENDRON: Gendron joins the College’s team as a clinical instructor in diagnostic imaging. Previously, she taught diagnostic imaging at the University of Bern in Switzerland, where she also did her residency in radiology under Dr. Johann Lang. A native French Canadian, Gendron received her veterinary degree from the University of Montreal, and spent several years in private practice working with companion animals. Gendron came to Cornell thanks to the quality of its staff. “Cornell’s radiology department is full of rock stars—it is an outstanding group, and I count myself lucky to work with them.”

DR. KATHRYN MCGONIGLE: McGonigle is here at the College for a one-year appointment as a part-time clinical instructor in small animal internal medicine. Her clinical interests are broad, but she especially enjoys endocrine and gastrointestinal disease management. McGonigle received her veterinary degree from Tufts University School of Veterinary Medicine and did her residency at Cornell. She spent the last four years of her career at BluePearl Veterinary Partners in Brooklyn, N.Y., as a small animal internal medicine specialist. McGonigle has enjoyed the transition back to an academic environment: “I’m so happy to be back with students and residents and fellow specialists,” she says. “It is fun to work with veterinarians at all stages of their careers—we all learn so much from each other and from working together.”

DR. EMMA DAVIES: Davies is a senior lecturer in neurology and neurosurgery. She received her veterinary science degree from Massey University in New Zealand, and attended the Royal Veterinary College at the University of London for further training, and her residency. She worked as a clinical neurologist at one of the largest and most diverse small animal veterinary referral centers in Europe, and followed that as a lecturer in veterinary neurology and neurosurgery at the Royal Veterinary College once again. At Cornell, Davies focuses on pain management, prevention and diagnostics in neurology patients.

DR. PHILIPPA JOHNSON: Philippa Johnson is a new tenure-track faculty in radiology. She graduated from Sydney University in 2005 and worked in general practice in New Zealand and China before completing a rotating internship in Southern England. She underwent a residency at the Animal Health Trust, Newmarket, UK, and attained European Diplomat status in Veterinary Diagnostic Imaging in 2012. She has since worked at UC Davis as a clinical radiologist and undertook a masters in neuroimaging at King’s College in London. Her research is focused on the improved diagnosis and assessment of neurological disease in animals using advanced magnetic resonance imaging techniques.

DONKEY SYMPOSIUM: LEARNING ABOUT THE “LONG-EARS”



The Cornell University College of Veterinary Medicine and its Animal Health Diagnostic Center will host the fourth annual Donkey Welfare Symposium this fall. The event will run concurrently with the NYS Veterinary Medical Society’s annual conference, September 30–October 2, 2016. The symposium is part of a global effort to recognize the plight and importance of the donkey to mankind. It is also meant to bring recognition to the veterinary care, welfare and humanitarian importance of donkeys worldwide. This symposium will include topics pertinent to both veterinarians, owners and donkey enthusiasts.

Cornell was chosen as host in part because it offers a course for veterinary students that focuses on the unique characteristics of “long-ears.” Although both are equids, donkeys differ from horses in ways that have implications for their medical care and management.

The course was developed by Drs. Erin Goodrich and Linda Mittel, of the Veterinary Support Services group at the Animal Health Diagnostic Center, and Dr. Nora Matthews, a visiting professor.

“We saw a need for educational outreach to veterinarians, veterinary students and owners,” says Goodrich. “Donkeys have provided services to humanity throughout the world for a very long time. It’s time to raise awareness of their utility among the veterinary community and beyond.”

The speaker line-up will include internationally recognized donkey expert Dr. Eric Davis of UC Davis and Dr. João Rodrigues, an expert in veterinary dentistry and maxillofacial surgery specializing in donkey dentistry.

Registration for the symposium will be made available online through the NYS Fall Veterinary Conference website. Contact Goodrich or Mittel (607-253-3900) for more information.

“DONKEYS HAVE PROVIDED SERVICES TO HUMANITY THROUGHOUT THE WORLD FOR A VERY LONG TIME. IT’S TIME TO RAISE AWARENESS OF THEIR UTILITY AMONG THE VETERINARY COMMUNITY AND BEYOND.”

—Dr. Erin Goodrich



REFLECTIONS ON HEALTH AND WELLNESS IN THE VETERINARY COMMUNITY

By Sophie Trowbridge '17



As members of a health care community, it comes as no surprise that our academic and professional lives can be stressful. The workload, the expectations, the social interactions, the pressure to succeed (and what success should look like) would make anyone wonder “why am I putting myself through all this?” That question has crossed my mind multiple times while learning to navigate the veterinary curriculum.

After my first year of vet school I experienced a slew of health problems all ultimately stemming from chronic stress and fatigue. My body got to the point where either I was going to fail—or my body was going to fail. While dealing with my anxiety, fear, and depression, I had to decide if staying in the veterinary curriculum would be healthy for me.

This is a story that I’ve heard time and time again in various permutations from vet students and veterinarians alike.

LEARNING

These struggles go beyond the student body and reach all members of the veterinary community. The choice to become a veterinarian is not taken lightly. It takes determination, dedication and compassion to embark on this journey. When faced with a health crisis, I was forced to examine my life and decide if this dream I had been working towards for so long was something I was capable of doing. Luckily, I was able to find renewal and strength by focusing on self-care, primarily through yoga.

As an undergraduate I started practicing yoga regularly as a way of managing my stress and anxiety. Since then it has become a mainstay for dealing with and moving through difficult experiences. It provides an essential outlet for my stress. Fortuitously for me, at the depth of my self-doubt, a local yoga studio offered a teacher training certification that just so happened to perfectly align with my academic breaks during vet school. I decided that I needed to take control of my own health and well-being; I needed to make life choices that would serve my whole person and not just the part that wants to be a veterinarian.

After I completed my 200-hour training in the summer of 2015, I found incredible confidence in knowing what to do to take care of myself, and by doing just that I was far better equipped to take care of and support all those around me.

I wanted to share this renewed confidence with my peers, but I was hesitant. In every medical profession there's a strong cultural and historic pressure to push oneself to the limit. I wondered if the veterinary community would be open to a yoga practice that encourages self-care. Now, I'm delighted to report that by the end of 2015's fall semester, I've taught 15 weekly classes and they have been received with enthusiasm and support.

My goal for our College community, beyond getting people to move their bodies and gain strength and flexibility, is to create a space that supports and encourages us to take care of ourselves. Regular sleep, eating well, exercising, doing things we enjoy that have nothing to do with veterinary medicine are so very often the first things to be compromised when we feel the stress of our academic and professional lives.

We live in a culture where regular routines of self-care are sometimes seen as self-indulgent. As service-oriented professionals, when we take the best possible care of ourselves, we are that much better able to serve the needs of our patients, clients, colleagues, friends and all those we interact with. By treating ourselves with kindness and respect we can give that right back to our community.

Of course, this is not as simple and easy as I'm making it sound. This takes discipline and practice, just like any other skill you want to cultivate. We have to take responsibility for our own experience and unapologetically ask for help when we need it. It is equally important that when help is asked for, that we as a community try to meet those needs and respond in a supportive and productive way. One of the biggest contributors that keep us from taking the time to rest is the thought that we don't deserve it or that we haven't earned it. Self-care is not only something we should not have to fight for—it is inherently essential to being human. Everyone: clinicians, students, support staff, interns, technicians and residents alike, all need and deserve time to take care of themselves.

I'm not trying to speak for others, but rather share my own experiences as a veterinary student, with the hope that, if nothing else, someone will read this and realize they are not alone. Our community as a whole is struggling and is in need of more support in this area.



Together, we can support one another and open the lines of communication to lift each other up. I believe it is possible to treat each other with the kindness and respect we all deserve and simultaneously work hard for what we want to achieve—without tearing ourselves or anyone else down to do so.



SOPHIE TROWBRIDGE '17, LEADS A YOGA CLASS WITH MOLLY HUNT '17, ELLIE MATHENY '18, AND BECKY CHILDS '17.



LEARNING

THEN



Rachel Hilliard



Lauren Jacobs



Yuan Kang



Allie Tuchrello



Theresa Hubbell



Michelle Forella



Jeremy Eule



Elizabeth Alexander

Student voices: Getting to veterinary school

What makes people decide to study veterinary medicine? Once they make that decision, how do they get to veterinary school? We posed these questions to some current students here at the College, and got back a variety of answers, with one key theme running constant throughout: dedication—to the patients, to the science, and to their own potential to grow and learn. Here's a sampling of what they had to say:

Q: When did you know you wanted to pursue veterinary medicine?

Allie Tuchrello '19: I knew I wanted to be a veterinarian as soon as I was old enough to be able to answer the question of what I wanted to be.

Michelle Forella '17: On my kindergarten "About Me" project, I said that I wanted to be a veterinarian. However, I didn't actually decide on that path until later in high school.

Rachel Hilliard '19: When I was very little I was convinced I would be a paleontologist, and I seriously considered a career in physics and also a PhD in biology when I was in high school. However, I knew that if I could swing it, I wanted my job to include animals in some way, so as a high school student I decided to experiment and see how I would enjoy life as a veterinarian.

Jeremy Eule '19: I first decided that I wanted to be a veterinarian when I was in elementary school. My uncle owned a veterinary practice in Astoria and ever since I went to work with him, I knew that that was the only thing that I wanted to do for a living.

Elizabeth Alexander '18: When my middle school class was asked to write a letter to our future selves for a time capsule, mine was addressed to myself as a fourth-year vet student on clinical rotations.

Theresa Hubbell '17: I was raised to believe that if I expected to gain something from the life of an animal—be that companionship, sport, food, etc.—then I was responsible for making that life as pleasant and productive as possible. So whenever an animal under my care did get sick it was torture to wait for the veterinarian—I wanted to know how to help them myself, right then. I suppose that desire never left me.

Isabel Jimenez '19: Unlike a lot of my classmates, I didn't decide on a veterinary career until I was halfway through high school. Realizing that veterinary medicine was where all my interests came together was a slow process of discovering exactly why each of my hobbies appealed to me.

Q: What did you do to prepare for veterinary school?

Lauren Jacobs '19: I started by shadowing a small animal private practice veterinarian in high school and asking my aunt, who's a veterinary technician, lots of questions. I continued by shadowing nearly all the veterinarians in my hometown (about eight, large and small animal and some ambulatory) at least once to get a sense of the different aspects of the profession.

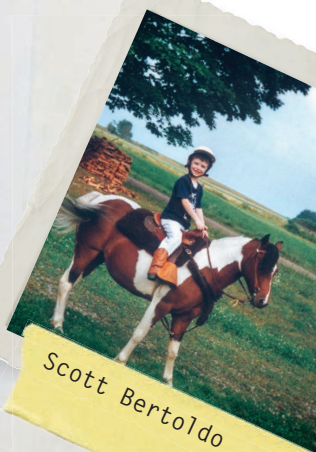
Scott Bertoldo '17: I really pushed my course work, not for grades, but trying to get exposed to as many relevant courses as possible. I took many non-required courses; biology of x, y and z, chemistry of every level I could get into, zoology and behavior classes, environmental and evolution courses, and most importantly human anatomy and physiology (human A&P is nearly identical to the animals we learn).

Michelle Forella '17: First, I got a job as a kennel assistant at a veterinary hospital. This was a really important step for me because I needed to know if I actually liked working in veterinary practice, since becoming a vet is a huge life commitment.

Kaitlyn Briggs '17: I was lucky because my grandfather was a veterinarian, so I got to ride with him at a very young age to race tracks for his equine work. When he stopped working, I started shadowing the veterinarian that bought



Kaitlyn Briggs



Scott Bertoldo

NOV



Rachel Hilliard



Lauren Jacobs



Yuan Kang



Allie Tuchrello



Theresa Hubbell



Michelle Forella



Jeremy Eule



Elizabeth Alexander



Isabel Jimenez

his practice. At age 16, after I had already been volunteering my time during my summers and on the weekends, I was offered a job at the small animal practice as a veterinary assistant.

Elizabeth Alexander '18: During the summer before I started college, I shadowed a group of four veterinarians at a local small animal veterinary hospital. The clinic's schedule ran late into the evening, so I was able to spend a lot of time with the vets and technicians observing physical exams, surgical procedures, and in-house lab work.

Isabel Jimenez '19: I spent a summer at the Cornell Teaching and Research Center vaccinating and treating sheep and cows, learning about herd health, and also pitching a lot of hay and baling wool, and riding around in the pickup truck. I spent a winter break at a veterinary oncology specialty practice and I don't think I touched a single animal, but I learned so much from talking with the veterinarians. They would have little presentations prepared for me some mornings on genetics or immunology, and one of the vets made me a chart about different chemotherapy options.

Q: What advice do you have for high school students who are interested in becoming a vet?

Yuan Kang '17: I encourage everyone to be involved in their community, keep up hobbies, and develop leadership skills. Veterinary medicine involves a diverse skill set, so activities that are seemingly unrelated to animals can still be very helpful!

Allie Tuchrello '19: Make time every day to do something you love, even if just for an hour, because you will come to depend on that activity or thing that brings you happiness and recharges you later on when things get even more stressful (yes it will get more stressful).

Scott Bertoldo '17: Stand out, have some common sense and, importantly, become a well-rounded person, because this is a well-rounded profession.

Rachel Hilliard '19: All experience is good experience (within reason), even if that means cleaning stalls for hours or waiting tables in a restaurant. Any skills you gain will help you in your future career!

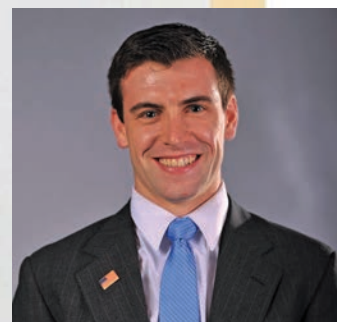
Elizabeth Alexander '18: Try to get at least a little bit of experience with as many different species as you can—you can even shadow vets who work at zoos or aquariums, or in the research field—before you start thinking about what type of practice might suit you best.

Theresa Hubbell '17: Make sure that you are ready for the lifestyle. A typical veterinarian does not work 40 hours a week—it is usually at least 60 if not more. Take on multiple jobs or responsibilities during breaks from school to see if you are interested in that kind of constant commitment. Working odd hours—for instance, night shifts—is also helpful since veterinary work is often emergent and happens at all hours of the day.

Isabel Jimenez '19: Ultimately, exposing yourself to different specialties and different practices will help expose you to the different pitfalls in veterinary medicine, and it's very important that you're able to understand and willing to tackle the difficulties that come along with the profession, from euthanasia to doctor-client communication.



Kaitlyn Briggs



Scott Bertoldo



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DRAUGHT OXEN IN THE KAVANGO ZAMBEZI REGION OF SOUTHERN AFRICA PULL A WOODEN SLED, PROVIDING A USEFUL MEANS OF TRANSPORT OF WATER, WOOD AND GRAIN.

A young boy is running towards the camera on a dry, dusty path. He is wearing a colorful t-shirt with orange, green, and white sections, and blue shorts. He is holding a long, thin stick in his left hand and a string in his right hand. In the background, there are trees and another person walking away. The sky is clear and blue.

FOOD: A PUBLIC HEALTH PERSPECTIVE

INTRODUCTION BY GEN MEREDITH,
ASSOCIATE DIRECTOR FOR INTERNATIONAL
PROGRAMS AND THE MPH PROGRAM

As our global population grows and innovations abound, the world is becoming a smaller yet more complex place. Fruit that grows in one hemisphere can be shipped to someone's plate across the world in a matter of days. Fish disappear from oceans as they multiply in aquaculture ponds. Food waste plagues one country, while food scarcity plagues another. And in every corner of the globe, food and food production is a source of both health and disease.



DR. SARAH DUMAS '12

A VILLAGE POULTRY GROUP MEETS TO EXCHANGE IDEAS AND RESOURCES IN ZAMBIA.



GEN MEREDITH

The challenges our global food systems face call for a public health approach—a collective commitment to disease prevention and health promotion; a systems-view that considers and addresses the factors that influence our behaviors and health outcomes.

Given that our community is now our world, it seems that integrated public health—or complementary paradigms of Global Health, One Health, or Planetary Health—is more important than ever.

The One Health paradigm asks public health practitioners to focus on the multiple and inextricable relationships between humans, animals, and the environment, and the impact those relationships have on public health. A One Health approach recognizes that, to safely and sustainably feed the world population, we must work together and draw from the best practices of complementary disciplines—including veterinary medicine, human medicine, environmental sciences, agricultural sciences, and social sciences—in order to find feasible and sustainable solutions.

Feeding the global community comes with complex problems: outbreaks of food-borne illnesses; the impact of climate change on food production and food security; the tug-of-war between wildlife and livestock; the ongoing concern with antibiotic resistance; and the effects of animal disease outbreaks on food production and availability. All of these issues highlight the fact that the world faces big challenges, and will need complementary science and practice to turn the tide on them.

Since arriving at Cornell and the College to work as associate director for international programs and the nascent Master of Public Health (MPH) program, I have been struck by how well this institution, and those affiliated with it, exemplify cutting-edge research and innovation that unites animal, human, and environmental disciplines. From my lens, much of the College's work is public health work.

Worldwide, having the right amount, and the right kinds, of food is often the fulcrum between disease and wellness. Concurrently, the lack of safe food production is often a major source of public health problems. It is these areas of food security and food safety that many of our faculty, students, and alumni are making impactful strides. Read on to learn more about some of their diverse and vital efforts:



POULTRY PATROL

Dr. Jarra Jagne, senior extension associate in the Department of Population Medicine and Diagnostic Sciences, works daily with both large and small poultry producers to keep flocks healthy and poultry products safe for consumption. She assists farmers in risk assessment exercises that are used to design biosecurity programs to keep disease agents out of poultry farms. These biosecurity programs are crucial in controlling two important poultry diseases; *Salmonella enteritidis* (SE) and avian influenza (AI).

Jagne is the link between farmers and state and federal egg quality assurance programs designed to monitor the presence of SE in eggs, which causes thousands of food-poisoning cases in the United States each year. Through the assurance programs, environmental swabs from farms are routinely tested at the Animal Health Diagnostic Center's bacteriology lab.



Jagne has also been instrumental in establishing a passive surveillance testing program for poultry necropsy submissions coming through the pathology department in response to the highly pathogenic avian influenza virus H5N2 that recently caused the death and culling of 48 million poultry in the Midwest. She also serves on the General Conference Committee of the National Poultry Improvement Plan, an advisory body to the Secretary of Agriculture charged with producing minimum biosecurity program standards for the poultry industry in the aftermath of highly pathogenic AI.



SAFER SALADS

While *Salmonella* and pathogenic *Escherichia coli* (*E. coli*) are often associated with tainted eggs and undercooked burgers, the bacteria can transmit via very different foods.

Dr. Renata Ivanek, associate professor of epidemiology, tackles the transmission of *Salmonella*, *E. coli*, and other foodborne pathogens through produce crops. “Our eating habits are changing—we all like to eat fresh fruits and vegetables, and that’s great,” she says. “But it can increase risk.”

A key problem stems from the fact that most produce growers rely on surface water to irrigate their crops. “This water will inevitably have pathogens in it,” says Ivanek. That contaminated water can often splash up onto the leaves and

fruit of crops, which are then passed along to the consumer. Ivanek is studying different methods, such as UV light treatments, to treat irrigation water before it is distributed to crops.

Ivanek also applies statistical and mathematical modeling to the issue of foodborne pathogens in cattle and swine operations. “I’m trying to pinpoint the natural drivers of variability so we can find intervention strategies,” she says. From these models, she then takes her findings and tests them in the field. Ivanek also specializes in what’s called ‘landscape epidemiology’—how variables like land cover, soil type, or aquatic features affect the transmission of pathogens. This research has pointed out how pivotal things like rainfall and ambient temperature can be in transmission.

“SOON AFTER ANTIBIOTICS WERE DISCOVERED, THERE WAS RESISTANCE, AND WE HAVE BEEN TRYING TO KEEP AHEAD OF IT EVER SINCE.”

—Interim Dean Lorin Warnick



ANTIMICROBIAL RESISTANCE: MONITORING MILK

Even if pathogens do infect our food chains, modern antibiotics have been very successful at destroying them. However, bacteria mutate constantly—meaning antibiotic-resistant genes eventually emerge. If bacterial populations are exposed to antibiotics, the resistant bacteria may survive, replicate and become the dominant strain. Resistant genes can even travel via stray DNA to normal bacteria, leading to antibacterial resistance in previously susceptible pathogens. “We’re in an arms race with pathogenic microbes” says **Interim Dean Lorin Warnick**, professor of ambulatory and production medicine. “Soon after antibiotics were discovered, there was resistance, and we have been trying to keep ahead of it ever since.” Antibiotics present in animal feed, waste, and products may create more opportunity for resistant bacteria to thrive—highlighting the importance of studying the cause and effect of antimicrobial resistance in animal production.

Warnick’s research group, including **Dr. Richard Pereira** and **Julie Siler**, has recently studied the effects of antibiotics in milk from cows that are treated with antibiotics. Known as ‘waste milk’, it contains very low levels of antibiotics and cannot be sold for human for consumption—often, it’s fed to calves instead. Warnick’s group found that calves that were given these ultra-low doses of antibiotics in their milk were more likely to have resistant bacteria in their feces. The finding points to the many subtle ways antimicrobial resistance can develop in animal production. “This underscores the importance of disease prevention and good animal husbandry to minimize the need for antibiotic treatment. We also need to look at ways to handle the effect of residues in waste milk on resistance,” says Warnick.

“THE PROGRAM HAS HELPED DECREASE THE USE OF ANTIBIOTICS BY 50 PERCENT, WITHOUT HARMING OUTCOMES IN COWS, AND BOOSTING ECONOMIC BENEFITS FOR FARMERS.”

—Dr. Daryl Nydam



ANTIMICROBIAL RESISTANCE: PROMOTING PRUDENCE

Dr. Daryl Nydam, associate professor of dairy health and production, is tackling the issue of resistance through working with his colleagues in Quality Milk Production Services (QMPS). The program delivers “more prudent and judicious use of antibiotics” for dairy farms, where the most common cause for antibiotic treatment is mastitis. Every year, roughly 30 percent of a herd can acquire an

intramammary infection. “There’s usually at least one cow suffering from mastitis every day on a sizeable dairy operation,” says Nydam. Antibiotics are the default treatment for the disease, however many of these bacterial infections don’t respond to antibiotics, or the cow’s own immune system will clear the infection on its own, making antibiotics unnecessary. Through QMPS, Nydam and colleagues provide 24-7 diagnostic services for New York State dairies. With an accurate diagnosis, dairy farmers can know if antibiotics should be used. “The program has helped decrease the use of antibiotics by 50 percent, without harming outcomes in cows, and boosting economic benefits for farmers,” he says. Nydam’s team actively trains farmers and veterinarians in New York State and around the world in this approach, including those in the Netherlands, South Africa, Uruguay, and China.



SIDETRACKING SALMONELLA

An alternative approach to fighting antimicrobial resistance is bypassing the use of antibiotics altogether. **Dr. Craig Altier**, professor and chair of the Department of Population Medicine and Diagnostic Sciences, works on a way to disable harmful *Salmonella* bacteria in livestock animals so that it doesn’t cause infection at all. He’s found that certain substances, similar to fatty acids produced in the intestine, can neutralize the process by which virulent *Salmonella* attacks cells in the gut. Without the ability to attack their host, “they lose their competitive advantage in the bacterial population,” Altier explains. “The other bacteria will eat the available nutrients.” So far, the approach is being tested in mice, and Altier’s team will begin testing it in chickens shortly.



DR. YRJÖ GRÖHN

TRACKING BACTERIA IN BEEF

Dr. Yrjö Gröhn, James Law Professor of epidemiology, specializes in mathematical modeling of food production systems. His recent work examines how and if antimicrobial resistance is transmitted from beef cattle up to the consumer. Armed with real-world data from farms and feedlots, Gröhn then runs statistical models that can pinpoint ways to improve food production system safety.

Currently, Gröhn's mathematical models are helping to deploy an important public health policy; to combat antimicrobial resistance, the FDA is phasing out "growth-promoting" antimicrobials in animal feed. Gröhn is part of an FDA-organized working group tasked with determining the true impact of the policy, which will be fully implemented in 2018. "We need

to see if there has been a change in antimicrobial resistance," he explains. "But we cannot answer that question until we first have a baseline." Thus, the working group will first determine the best way to measure the current levels of antimicrobial resistance at the farm, slaughter, retail, and consumer level of the beef industry. The effort is no small undertaking—findings from one feedlot or slaughterhouse cannot be extrapolated to another. Once the working group successfully teases out an accurate method of measurement, Gröhn and his colleagues can then determine if the FDA's ban on antibiotics in animal feed translates to lower rates of resistance.

"WE NEED TO SEE IF THERE HAS BEEN A CHANGE IN ANTIMICROBIAL RESISTANCE, BUT WE CANNOT ANSWER THAT QUESTION UNTIL WE FIRST HAVE A BASELINE."

—Dr. Yrjö Gröhn





KEEPING FOOD SUSTAINABLE & ACCESSIBLE:

MO KAI HONG

BEYOND ENSURING OUR FOOD SYSTEMS ARE SAFE, WE NEED TO NOURISH ALL GLOBAL COMMUNITIES IN WAYS THAT WORK IN HARMONY WITH THE EARTH'S ECOLOGICAL SYSTEMS.

ADVANCING ASIAN AQUACULTURE


Dr. Rod Getchell, research scientist in the Department of Microbiology and Immunology and associate director of the AQUAVET® program, along with **Dr. Hélène Marquis**, professor of microbiology, are helping to ensure that aquaculture (which makes up one-third of the world's fish food supply) is responsibly managed as it continues to grow at a remarkable rate, particularly in Asia. At Japan's Obihiro University of Agriculture and Veterinary Medicine, close to where more than one billion juvenile salmon are reared in hatcheries every year, Getchell and Marquis are working to improve the fish health teaching capabilities of their colleagues there.

Additionally, at City University in Hong Kong, they are helping develop a master's program in aquatic production and veterinary health through consulting on curriculum and faculty hiring. "This region of the world produces eighty to ninety percent of farmed aquatic animals and plants, and there is ample expertise in culturing these organisms," says Getchell. "However, what the area has lacked is sufficient aquatic animal health training capabilities."

Currently, there are about 26 fish culture zones in the Hong Kong area occupying a total area of 516 acres with some 968 licensed operators. The majority of licensed farms are small and family-run, consisting of one to two rafts



with an average total area of around 3,100 square feet. "With new fish species being stocked, farmers have seen new diseases," Getchell explains. "The need for extension veterinarians with aquatic animal health expertise has never been greater."



"WITH NEW FISH SPECIES
BEING STOCKED, FARMERS
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VETERINARIANS WITH
AQUATIC ANIMAL HEALTH
EXPERTISE HAS NEVER
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—Dr. Rod Getchell

LEFT: DRS. ROD GETCHELL AND HÉLÈNE
MARQUIS TOUR MARINE FISH FARMS AS PART
OF THEIR COLLABORATIVE VISIT TO CITY
UNIVERSITY IN HONG KONG.

THIS PAGE: GETCHELL AND MARQUIS VIEW
THE REEF TUNNEL AT THE OCEAN PARK GRAND
AQUARIUM IN HONG KONG.

DISCOVERY

COVER STORY: FOOD
AND PUBLIC HEALTH

**“NEITHER THE LIVESTOCK
NOR WILDLIFE SECTORS
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GENERATIONS TO COME.”**

—Dr. Steven Osofsky

CATTLE AND CONSERVATION IN SOUTHERN AFRICA

In a different corner of the world it is land mammals, not fish, that support local food needs as well as livelihoods. The Kavango Zambezi Transfrontier Conservation Area, a 460,000 square-km transboundary region located in southern Africa, supports scores of wildlife species as well as livestock—both of which are vital for economic growth in the area. However, the two sectors (conservation and agriculture) had been at odds due to regulations going back more than half a century regarding foot and mouth disease (FMD) control.

The World Organization for Animal Health (OIE), which provides international standards on commodities that are a potential source of animal disease agents, has long required that those African countries seeking to export beef (but having wild species

that naturally harbor FMD viruses) to separate wildlife from cattle via impenetrable game fencing. Not only did the fencing cause dramatic and deadly effects on free-ranging wildlife over the decades, the rigid policy excluded the poorest livestock farmers from global beef markets, since they live closest to wildlife areas.

Dr. Steven Osofsky '89, executive director of wildlife health and health policy at the Wildlife Conservation Society, worked with partners in the Southern African Development Community (SADC) to help get these policies modified by the OIE so that rather than relying on the physical separation of wildlife and livestock through extensive fencing regimes, countries can instead choose to implement basic biosafety principles



to ensure disease-free beef products. “Neither the livestock nor wildlife sectors should seek to dominate the other,” says Osofsky. “Instead, it is time to make land-use decisions that will be socially, ecologically and economically sustainable for generations to come.”

Osofsky has a long track-record of conservation work done in collaboration with the College; he received the first-ever Expanding Horizons grant in the 1980s, which allowed him to travel to Kenya to participate in an elephant research project.



“IT’S SO VERY SATISFYING TO BE EMPOWERING WOMEN TO FEED THEIR FAMILIES, AND THEMSELVES.”

—Dr. Sera Young



BUNNY BENEFITS

Dr. Sera Young, assistant professor of global health and nutrition, also works to improve food security in rural Africa—specifically among mothers and children that are food-insecure, HIV-affected, and anemic. She currently focuses on communities in Kenya and Tanzania where women and children frequently suffer from food insecurity and resulting health issues. Young explains that food insecurity “is not straight-up hunger, it’s unreliable food availability. It can mean—we have food tonight, but what are we going to eat tomorrow? Or maybe there’s enough food for three people, but there are five mouths to feed. It’s about sufficient diversity and quantity of foods.” Through an NIH grant, Young examines

the consequences of food insecurity during pregnancy and lactation—and is finding just how serious it can be. “We’ve just published a paper in the *Journal of Acquired Immune Deficiency Syndrome* that found that food insecurity is the strongest predictor of failed viral suppression in a cohort of HIV-positive women in Uganda,” she says.

Young and her group are looking at practical interventions to reduce this problem—one of which, is raising rabbits. “There are some things we can’t do,” Young says. “But what we can do is empower women—and damn if rabbit farming might do exactly that.”

Rabbits are proven as efficient sources of animal protein—they are easy to feed, raise, and (of course)

breed—they are quieter than chickens, less environmentally destructive than goats or pigs, and can be played with by children. “So far, the biggest hurdle seems to be hutch production,” says Young. As rabbit farming scales up, it’s Young’s hope that the rabbits can alleviate food insecurity in mothers and children both by producing food and generating income through sales of rabbits and their manure and urine as fertilizer. “It’s so very satisfying to be empowering women to feed their families, and themselves,” she says.



EGG FACILITIES HATCH NEW OPPORTUNITIES

Dr. Sarah Dumas '12 is also working hard to empower rural African women through food security. Her first foray into this effort was through Cornell's Expanding Horizons program. In 2009, Dumas helped develop five community-owned egg laying facilities in rural Zambia for her Expanding Horizons work. This initiative has now expanded to 24 facilities that currently sell eggs in local markets, and is the basis of Dumas's ongoing graduate work as a PhD student with **Dr. Alex Travis's** research group.

"Chronic undernutrition is one of the main public health concerns in Zambia," Dumas explains, "in part because animal-source foods are so rarely consumed there." Her goal has been to boost nutrition in mothers and children in rural communities, and the egg laying facility program, in partnership with the non-profit group COMACO (Community Markets for Conservation) is doing just that. The program's sturdy, predator- and theft-proof coops house hardy, hybrid chickens bred for producing high numbers of eggs (typical village chicken varieties are not great layers).

Prior to these facilities, local households were consuming roughly two eggs per week; afterwards, households were eating more than five eggs a week. Educational campaigns, run by COMACO and broadcast by local radio stations, tout the nutritional benefits of eating eggs for young children. "We're telling them that eggs don't just fill your belly," says Dumas. "They're a valuable source of protein, and of micronutrients like vitamin B12, iron, and choline. If you tried to get a child to consume enough of those nutrients from beans and rice, you couldn't do it." With egg consumption proven to be on the rise, Dumas's goal is to determine if these new facilities result in measurable growth in the communities' children.

The egg laying facilities have brought economic benefits too. In the initial pilot project, all five facility owners made enough surplus income to send their children to school, and all current facility owners are making enough to replenish their flock with new hens.



HELPING PUPS STAY PAIN-FREE

DR. SOFIA CERDA-GONZALEZ, ASSISTANT PROFESSOR OF NEUROLOGY AND NEUROSURGERY, TACKLES THE PROBLEM

By Lauren Cahoon Roberts

The Cavalier King Charles Spaniel is the nineteenth most popular breed according to the American Kennel Club, and it's not hard to see why; their silky ears, limpid brown eyes, and gentle disposition make 'Cavis' an irresistible choice for a pet.

Unfortunately, Cavaliers are one of the breeds most affected by a group of diseases called craniocervical junction (CCJ) anomalies—abnormalities in the skull and cervical vertebrae which can lead to occasional incapacitating neuropathic pain and sensory abnormalities. Dr. Sofia Cerda-Gonzalez, assistant professor of neurology and neurosurgery, is tackling this problem at both ends. Through two new grants she and colleagues at Cornell and North Carolina State University will

be looking at ways to treat pain in dogs that already suffer from these diseases, while working to reduce the frequency with which the condition is passed on to new generations. "With these two

projects, we hope to advance the diagnosis and treatment of craniocervical junction anomalies in this wonderful breed," says Cerda-Gonzalez.

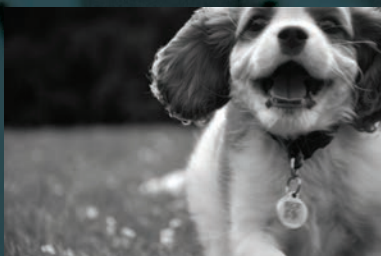
NEW WAYS TO KEEP THE PAIN AT BAY

Craniocervical junction anomalies occur with high prevalence in Cavis and other small and toy breeds and can contribute to an accumulation of fluid within the spinal cord, a condition known as syringomyelia.

This can manifest as chronic neuropathic pain and abnormal sensations primarily in the head, neck and shoulders. Dogs often exhibit a tell-tale 'air guitar' scratching of the shoulder and neck, and may experience acute spikes of pain causing affected dogs to suddenly yelp out loud.

Currently, these symptoms are most often treated chronically using the drugs gabapentin or pregabalin. In a subset of dogs, however, these drugs are insufficient. Furthermore, in 25% to 75% of cases, the pain worsens even despite medical management. In 15% to 20% of cases, it can lead to euthanasia.

With a grant from the American College of Veterinary Internal Medicine and the Pharmacology Foundation, Cerda-Gonzalez and her colleagues are investigating the efficacy of an



GABRIELLE WOO '17



anti-nausea drug, maropitant, for treating acute pain in dogs. If this drug is successful in managing acute pain, the researchers plan to assess its efficacy in treating acute pain events associated with syringomyelia and craniocervical junction anomalies. “There are anecdotal accounts of maropitant working to treat acute pain episodes in dogs, but this has not yet been evaluated scientifically,” says Cerda-Gonzalez. “We want to investigate whether it truly has analgesic effects in dogs.”

To test the drug, the study team is first evaluating whether the drug is effective as an add-on analgesic in dogs that have been treated surgically for an intervertebral disc herniation. The researchers will compare the pain management in dogs receiving either maropitant or gabapentin, (as add-on agents to standard opioid pain treatment).

FINGERPRINTING THE DISEASE

Cerda-Gonzalez will also be looking at the genetics of syringomyelia within the breed, along with researchers at North Carolina State University. “We want to find out how we can prevent this disease in the first place,” she says. While the disease is known to be inherited, the genetics are not yet well defined.

Currently, the only way to definitively diagnose the disease is via an MRI of the brain and its junction with the cervical spine, which can show the tell-tale malformations associated with syringomyelia. The research team plans to gather genetic samples from Cavis that have had their craniocervical junction evaluated via MRI (including both normal and abnormal findings). By conducting genome-wide screens, they will look to see if any genetic ‘fingerprints’ emerge that correspond to the physiological hallmarks of the disease that show up in the MRI. If a particular pattern is found in the genes, it could then be used as the basis of a genetic test.

“The long-term plan is to have a genetic test for syringomyelia that could be done with a cheek swab or a blood test,” says Cerda-Gonzalez. “The challenge will then be taking this into consideration along with other genetic anomalies that could influence breeding strategies.” If developed, breeders could easily test their dogs for the condition, and could potentially withhold from breeding animals that suffer from the problem—thus reducing the likelihood that future generations will develop syringomyelia.

“THESE RESULTS WILL BE INTERESTING, AS THE INHIBITOR WE ARE USING IS ALREADY FDA-APPROVED TO TREAT CERTAIN HUMAN CANCERS.”

—Dr. Vincent Baldanza

CORNELL RESIDENT WINS AMERICAN KENNEL CLUB FELLOWSHIP

The American Kennel Club Canine Health Foundation selected Dr. Vincent Baldanza, veterinary oncology resident at the College, as a 2016 clinician-scientist fellow. The fellowship will support Baldanza’s investigation of canine osteosarcoma, the most common primary bone tumor in dogs. Baldanza’s research focuses on the Hedgehog cell signaling pathway, which is crucial for normal development and for maintenance of bone. If abnormally activated, it can contribute to tumor formation and the development of many human cancers, including osteosarcoma.

While much has been discovered around the Hedgehog pathway in human osteosarcoma, little is known about its role in canine counterparts. Baldanza plans to build off the available human data to determine how targeted inhibition of a particular receptor of the Hedgehog pathway impacts the ability of these canine cancer cells to grow and survive. “These results will be interesting, as the inhibitor we are using is already FDA-approved to treat certain human cancers,” Baldanza says. “I also hope these results will act as a foundation for future experiments and clinical trials exploring more efficacious, targeted therapeutics for the treatment of this disease in dogs.”







“THE SPORTS MEDICINE
[PROGRAM] DID AN
AMAZING JOB WORKING
WITH SCOOTER. THEY
TRULY HAVE GIVEN HER
BACK HER LIFE.”

—Willow Sullivan

MIRACLE WORKERS: CORNELL CLINICIANS GIVE TWO-LEGGED DOG A NEW LIFE

By Lauren Cahoon Roberts



SCOOTER, BEFORE SHE WAS GIVEN HER CUSTOM-FITTED CART.

By all accounts, Scooter is lucky to be alive. The pointy-eared, white-and-cream-colored mutt has no back legs; she was found dragging herself around on the streets of Thailand, her lower body covered in huge, inflamed sores. Now, thanks to the clinical team at Cornell University Hospital for Animals (CUHA), Scooter uses a custom-fitted cart to trot from place to place. “She’s truly a miracle dog,” says owner Willow Sullivan.

A HIGHLY UNUSUAL CASE

Sullivan, who runs an animal sanctuary and rescue organization called “Willow’s Wings”, first heard about Scooter from a Thai animal rescue organization (Soi Dog Foundation), which initially rescued the injured dog. Thanks to donations from fellow animal lovers, Sullivan was able to fly Scooter to the United States, where she then took the dog to CUHA for assessment and treatment.

When Dr. Chris Frye, resident in both sports medicine and clinical nutrition, first examined Scooter, the extent of her injuries were unlike anything he had seen before at the hospital. “The whole case is highly unusual,” he says. Besides her missing hind legs, (which looked to have been removed purposefully) Scooter’s spine had been broken, causing a tell-tale hump in her back. Her bladder and part of her reproductive organs had been damaged and were partially herniated through the pelvic canal, and her vulvar region was hugely inflamed and infected from having been dragged along the ground for several months. As a result, Scooter was incontinent, and suffered from a severe urinary tract infection. To determine the full extent of her injuries, Frye ordered a whole body CT scan, which revealed several fracture sites in the spine, neck, ribs, and in both femurs of the back legs. “She must have sustained massive trauma,” says Frye. “We know that it must have happened over three months ago, and that she had been living like that for at least that long. She’s an incredible dog.”

While her injuries were numerous and severe, Frye and the medical team were impressed with how Scooter’s body



had healed itself despite the trauma. “We couldn’t do much for the fractures—we didn’t want to touch her spine—it was a miracle it had healed at all,” Frye explains. Thus, they focused on treating Scooter’s infections and getting her mobile again.

MOBILE ONCE MORE

The medical team outfitted Scooter with a custom-designed cart, funded by a donor, which allows Scooter’s lower half to be strapped in and gently supported by a cloth sling. Scooter’s first experience with the cart “was pretty amazing,” says Frye. Initially unsure, she walked backwards into a wall. But with encouragement, she began to walk forward using her front legs. “We took her outside, and Willow [Sullivan] called to her—she took a few steps, and it was like a light went on in her head—she just took off running. You could see how excited this dog was to get around on her own.” Sullivan was amazed as well. “The sports medicine [program] did an amazing job working with her,” she says. “They truly have given her back her life.”

Now, Scooter easily wheels herself around Sullivan’s animal sanctuary, where she explores the fields and rolls into the barn to greet the other rescue animals. Both Scooter and her cart are remarkably durable; “Sometimes she’ll

flip over in the cart,” says Sullivan, “but we just flip her upright and she’s on her way again.” After the wheeled excursions, Sullivan removes the cart to give Scooter’s front legs a rest.

Scooter’s personality has also undergone a complete transformation; upon first arriving in the country, the dog was terrified and aggressive—even biting Sullivan when they first met. She wasn’t too keen on the CUHA medical team either. “She was very hard to handle, she didn’t trust people—you could tell she had had a really tough life,” says Frye. Now, Scooter is a different animal, one who happily approaches and nuzzles strangers.

Perhaps she knows how lucky she is. “Her life is 100 times better than it was when she first came in here,” says Frye. “Scooter is particularly special. She really is a miracle dog. It’s a phenomenal story.”

Visit <http://goo.gl/cIEZEK> to learn more about Scooter’s story

VETS TO THE RESCUE: ANIMAL HOARDING AND SHELTER MEDICINE

By Lauren Cahoon Roberts

In November 2015, Tompkins County SPCA officers encountered one of the worst animal hoarding cases they had ever seen: 28 live animals, and three already dead, crowded into a filthy single-wide trailer located in Newfield, N.Y. Dr. Elizabeth Berliner, the Janet L. Swanson Director of Shelter Medicine at Cornell, was a first responder, providing investigative and triage services on site. Veterinarians are often first responders in a hoarding situation; however, as Berliner notes, charging immediately into a scene is not typically the right approach. “We don’t immediately go rushing in, even though that is always what people want to do,” she says. “You need to stop for a minute and create a plan, because you may find yourself faced with a hundred animals in various medical and emotional states. You need to be able to provide a systematic and humane approach to managing their health and welfare while protecting yourself and your staff from injury.”

SERIOUS CONDITIONS

The Humane Society of the United States estimates roughly 250,000 animals are victims of hoarding each year. Increasingly, it’s up to veterinarians like Berliner, veterinary students, and animal shelter staff to rescue these helpless creatures. Berliner has seen roughly a dozen hoarding cases, with patients frequently suffering from skin disease, overgrown nails, skin and intestinal parasites, respiratory diseases, starvation, and emaciation. While these conditions are serious, they can usually respond to basic husbandry and adequate nutrition, with rescued animals making dramatic improvements in a week’s time once they’re removed from the hoarding situation.

WHY HOARDERS HOARD

Curing animal hoarders from the drive to collect pets is not so easy. “Recidivism in animal hoarding approaches one-hundred percent,” says Berliner. “The rare success story only occurs when there has been a team providing long-term support.” In the recent Newfield case, the very same hoarding couple had 98 animals seized from their one-bedroom trailer five years ago. In that case, three dead animals were found. Records state that the only available food and water was a half cup of moldy dog food and a quarter cup of water.

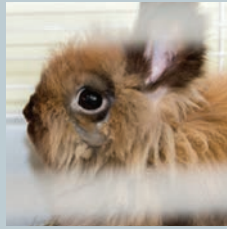
What drives this level of abuse and neglect differs from person to person, but most animal hoarders typically fall under three types: rescue hoarders, exploiter hoarders, and overwhelmed caregivers. “True animal hoarders do not recognize that they’re failing to provide adequate care,” says Berliner. “They may not even recognize death.”

Rescue hoarders will try to help animals in need, but take in more than they can handle; exploiter hoarders will collect pets for breeding and selling. In both scenarios, “Something flips,” says Berliner. “They lose control of the situation, but fail to identify that fact.” An overwhelmed caregiver, on the other hand, will recognize that they need help, and will often ask for assistance. “But in all of these situations, you end up with animals that are suffering,” Berliner says.

HELPING HUMANS AND ANIMALS

When those suffering animals are finally found, “It takes a full set of social services to intervene,” says Berliner. “It’s not just about getting the animals out, it’s about finding adequate housing, it’s about the mental health of the owner, getting those supportive services . . . Without intense, multi-agency activity, it will happen again.” While Tompkins County has a hoarding task force, many communities are not as well-prepared. In fact, some animal shelters may not have a resident veterinarians to treat hoarding patients, which presents a serious issue with very large hoarding cases. In these scenarios, a national response team comprising volunteer veterinarians is deployed to the area. Berliner and many Cornell students are on this team, and members receive calls for help roughly once a month.

Locally, when the Tompkins County SPCA rescues hoarded animals, Berliner and the other Cornell shelter medicine veterinarians and students are on-call to triage and treat the pets. Berliner notes that this collaboration is particularly impactful for the students. “They get the benefit of training and mentorship in such a situation, and are better trained to intervene and help in future situations,” she says. “By watching mentors go through the process, they recognize the need for a systematic response by which you alert all the right people, and remember that you can ask for help. It takes a team, and we are fortunate to have this collaboration between the College and the SPCA in our community.”



DR. ELIZABETH BERLINER, WHO PLAYS A KEY ROLE IN RESCUING AND TREATING VICTIMS OF ANIMAL HOARDING, HANDLES ONE OF HER SHELTER MEDICINE PATIENTS.



CORNELL NOW CAMPAIGN CONCLUDES

On January 30th in New York City, Cornell University celebrated the conclusion of a ten-year campaign that realized more than \$6 billion in philanthropy for the Ithaca and New York City campuses—an achievement shared with only a few universities world-wide. For the College of Veterinary Medicine, the contrast between where we were in 2006 versus present day is tremendous. Thanks to the outpouring of generosity from alumni, parents, and friends, the College is both stronger and better able to support students, faculty, and the animals and people we serve. We're excited to continue the momentum sparked by such generosity.



THE \$173.8 MILLION IN PHILANTHROPIC GIFTS AND PLEDGES RECEIVED BY THE COLLEGE OVER THE PAST TEN YEARS HAS:



Opened more doors to more outstanding students from all backgrounds by increasing Cornell's commitment to financial aid:

- Over \$25 million was raised for student support, including new scholarships. The College now provides more than \$2.4 million annually in student aid.



Boosted, renewed, and diversified Cornell's faculty, attracting rising scholars, innovators and creators:

- Six professorships were permanently endowed, and new laboratories were established for promising new faculty.



Elevated emerging disciplines and further advanced areas of tremendous medical and health benefit:

- Canine genomics; wildlife health; feline health research; equine and farm animal medicine; and medical imaging all received key boosts in support.



Created new and strengthened existing programs and facilities for cutting-edge teaching, discovery, and care.

- The College's beloved Expanding Horizons program became endowed, while new facilities were founded, such as the Cornell Ruffian Equine Specialists clinic on Long Island, N.Y.



Strengthened the College's financial future:

- The endowment grew from \$132.5 million to \$198 million, despite the mid-campaign recession.
- Unrestricted gifts to the Annual Fund more than doubled, from \$400,000 in 2006 to \$1.1 million in 2015.



Demonstrated the collective impact of transformative gifts and contributions at all levels.

- The largest gifts in the College's history were made, including three gifts in excess of \$5 million and one at \$10 million.
- An average of 5,624 donors per year contributed gifts of all sizes, together averaging \$16.2 million per year in gifts.

SELECTED HIGHLIGHTS



THE LARGEST GIFTS IN THE COLLEGE'S HISTORY WERE MADE, INCLUDING THREE GIFTS IN EXCESS OF \$5 MILLION AND ONE AT \$10 MILLION.



2015

- YEAR-LONG SESQUICENTENNIAL EVENTS CULMINATE WITH CHARTER DAY WEEKEND, APRIL 24-27.
- COLLEGE OF VETERINARY MEDICINE CAMPAIGN TOTAL SURPASSES \$173 MILLION.
- NEMO FARM ANIMAL HOSPITAL NAMED (PICTURED ABOVE).
- NAMED FACILITIES IN THE NEW VETERINARY EDUCATION CENTER INCLUDING; LEFTY'S PLAZA; TETLOW AND ROY PARK INNOVATION LAB,
- DONALD DVM '69 AND RITA POWELL CLASSROOM, AND THE RICHARD BASOM DVM '44 READING ROOM.
- JUNE R. LANCIANI BEQUEST MARKS LARGEST GIFT EVER TO CORNELL FELINE HEALTH CENTER.
- FIRST NAMED SPACE AT CORNELL RUFFIAN EQUINE SPECIALISTS DEDICATED: THE DAN AND JANE BURKE FOYER.
- FIRST-EVER GIVING DAY, 3.25.15
- THE 25 CLUB INAUGURATED TO RECOGNIZE GIVING PARTICIPATION BY CLASSES UP TO THE 25TH REUNION.



2014

- TAKODA'S RUN NAMED IN NEW VETERINARY EDUCATION CENTER (PICTURED ABOVE).
- BARBARA HERNDON BEQUEST ENHANCES JOHN WHITEFIELD MEMORIAL FUND AND CANINE HEALTH RESEARCH AT THE BAKER INSTITUTE.
- FIRST NAMED SPACE DEDICATED AT CORNELL UNIVERSITY VETERINARY SPECIALISTS: AN EXAM ROOM IN HONOR OF DR. MARNIN FORMAN.
- LANA AND FOXY EMERGENCY RECEPTION AREA NAMED AT CORNELL UNIVERSITY VETERINARY SPECIALISTS.
- ANNUAL FUND SURPASSES \$1 MILLION.
- ALUMNI ASSOCIATION ISSUES CHALLENGE GRANTS TO ENDOW EXPANDING HORIZONS AND HEALTHY PET CLINICS.

2013

- MAURICE AND CORINNE GREENBERG AND STARR FOUNDATION PROFESSORSHIPS ENDOWED (PICTURED ABOVE).
- BERTA A. CAMPBELL SCHOLARSHIP ENDOWED.
- ANNE GROOT SESQUICENTENNIAL FACULTY FELLOWSHIP ESTABLISHED.

2012

- WALLY FUND ESTABLISHED.
- JEANNETTE AND JOSEPH CZAPLUK EQUINE RESEARCH FUND ESTABLISHED.



CORNELL CAMPAIGN: BY THE NUMBERS

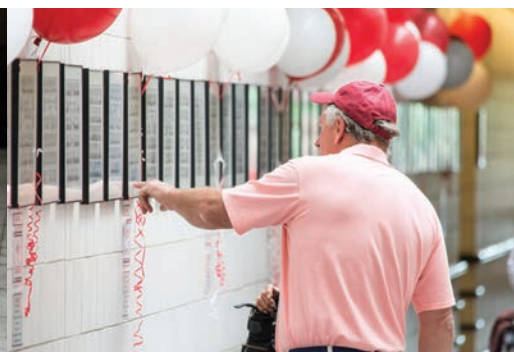
OVERALL GIVING

\$173.8 million

**\$42.9 million
from alumni**

**\$114.1 million
from friends**

**\$16.8 million
from corporations
and foundations**



2011

- “CORNELL NOW” CAMPAIGN EXPANDS WITH \$155 MILLION GOAL FOR COLLEGE.
- WILLIAM KAPLAN PROFESSORSHIP ESTABLISHED (RECIPIENT, DR. DAVID RUSSELL, PICTURED ABOVE).
- SISSY SUMMERER FUND FOR CANINE HEALTH ESTABLISHED.

2010

- ANONYMOUS \$10 MILLION GIFT TO SUPPORT CANINE GENOMICS AND CANCER RESEARCH RECEIVED, INCLUDING TWO ENDOWED FACULTY POSITIONS.
- COLLEGE’S ORIGINAL \$80 MILLION GOAL SURPASSED.
- ALUMNI ASSOCIATION GOES DUES-FREE.

2009

- JEAN HOLZWORTH DVM ’50 FUND FOR CORNELL FELINE HEALTH CENTER ENDOWED.
- BYRON T. HIPPLE SMALL ANIMAL HEALTH RESEARCH FUND ENDOWED.
- RECORD REUNION ATTENDANCE OF 29.8% OF REUNION YEAR ALUMNI.



FACULTY AND PROGRAM SUPPORT:

\$98 million



ANNUAL SUPPORT ACROSS ALL PROGRAMS*:

\$43.8 million



STUDENT SUPPORT AND PROGRAMS:

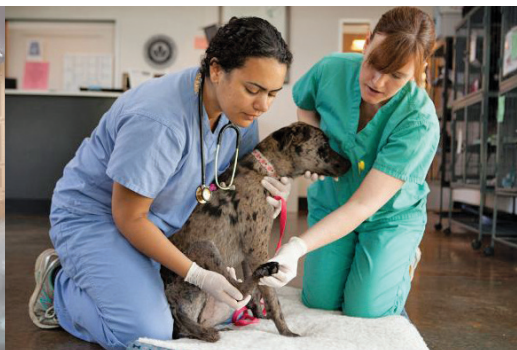
\$25.2 million



FACILITIES:

\$6.8 million

* includes Cornell University Hospital for Animals, Baker Institute, Feline Health Center and other units.



2008

- JANET L. SWANSON WILDLIFE HEALTH CENTER, JANET L. SWANSON DIRECTOR OF MADDIE'S SHELTER MEDICINE PROGRAM, AND JANET L. SWANSON IMAGING SUITE ALL NAMED (JANET AND JOHN SWANSON PICTURED ABOVE).
- TENTH YEAR OF MICHELE AND AGNESE CESTONE SCHOLARSHIP PROGRAM CELEBRATED.

2007

- JOSEPH E. PADDOCK LECTURE HALL DEDICATED (PICTURED ABOVE).
- 100TH ANNIVERSARY OF COLLEGE OF VETERINARY MEDICINE ALUMNI ASSOCIATION.

2006

- FAR ABOVE CAMPAIGN LAUNCHED WITH \$80 MILLION GOAL FOR COLLEGE OF VETERINARY MEDICINE.
- MADDIE'S® FUND GRANT ESTABLISHES MADDIE'S® SHELTER MEDICINE PROGRAM AT CORNELL (PICTURED ABOVE).

Dr. Mark Olcott '95 is helping to solve a pervasive problem in veterinary medicine. His software, VitusVet, has helped save lives and improve outcomes of patients across the country by enabling efficient sharing of veterinary medical records. He attributes the innovation in part to his varied veterinary career. "I took an extremely unusual path," says Olcott. "It's a case of having intellectual wanderlust."

He isn't kidding; after graduating from Cornell's DVM program, Olcott began his career as an equine veterinarian, but eventually switched to small animal practice during which he started a mobile veterinary ultrasound business. Then, after ten years of private practice, he opted to embark on a rotating small animal internship with a focus on emergency medicine. After all that, the self-proclaimed 'total nerd' decided to follow up his veterinary training with an MBA, which enabled the creation of VitusVet.

"Now I look back at my career, and it all makes sense," says Olcott. "Very few veterinarians have worked in general medicine, and in emergency medicine, and owned their own practice . . . My career path has been unusual for a veterinarian, but a big part of my success has come from being willing to take risks. Listen, if I can do it, so can you." His multiple perspectives and risk-taking allowed him to connect the dots on the information-sharing issue. When he began working in emergency veterinary care at 24-7 emergency facilities, Olcott realized how siloed patient information was. "In the ER, I would see a patient at 10pm that had had a work-up at noon that very same day at their referring vet's, and I couldn't see any of that information—I'd have to repeat the same tests," he says. "That's not even the worst of it—I've had patients die on me as a result. I realized this was a massive problem."

Having spent many years as a general practitioner, he knew that many of those veterinarians still shared medical data via fax. "When you share records as a referring vet, you don't think much about it," he says, "but you're closed fifty percent of the week. You have all this great information, but it's locked behind your walls. Veterinarians need to modernize. The average clinic is ten years behind where consumers are. We run the risk of becoming irrelevant."

Motivated to find a solution, Olcott decided to go to business school. There, he met his future co-founder Kalpesh Raval, a software developer, with whom he devised and developed VitusVet concept; by bolting on to a practice's existing software, VitusVet automatically stores medical records in the cloud, making them accessible anywhere, anytime, to both pet owners and other veterinarians.

Olcott notes that the younger generations of veterinarians are more open to the product, and that "veterinarian students get the idea instantly." For clinicians who are more set in their ways, Olcott has a compelling argument: "Increasingly, this is what clients want, and it can help you maintain relevancy among users who are accustomed to the 'Amazon.com' -type experience," he says. "It's a powerful tool to make the doors swing."

His pitch has power; so far, many veterinarians and practices have already embraced the technology; VitusVet is used in nine states, with many thousands of pet owners currently using the app. Even though business is booming, Olcott's favorite aspect of his new career path is its impact on animals. "This software saves lives; it really gives me an opportunity to be an advocate for not just one, but thousands of patients. I'm able to make an impact on veterinary medicine at a whole new level," he says. "At the end of the day, it's about being a better advocate for our patients."



ALUMNI PROFILE: MARK OLCOTT CONNECTS THE DOTS

By Lauren Cahoon Roberts



DAVID BETTS / METROPOLITAN PHOTOGRAPHY



**“AT THE END OF
THE DAY, IT’S
ABOUT BEING A
BETTER ADVOCATE
FOR OUR PATIENTS.”**

—Dr. Mark Olcott '95

SWEET SCIENCE:

OUTREACH PROGRAM GETS GRAD STUDENTS IN CLASSROOMS

By Olivia Margit Hall

IT'S A BLAST TO WATCH [STUDENTS] EXPERIENCE THIS AND TO HAVE THAT LEVEL OF ENERGY AND ENGAGEMENT IN THE CLASSROOM."

—Erin Hammes





FALL INTO SCIENCE VOLUNTEERS TODD PAVEK, BETH NOE, MATT PENNINGTON, ELIZABETH MOORE, JESS BROWN, ERIN CHU, AND MELISSA MCDOWELL POSE FOR THE CAMERA (LEFT). MATT PENNINGTON (RIGHT) AND AMY VASQUEZ (BELOW) INTERACT WITH STUDENTS IN THE CLASSROOM.

Imagine biting into a slice of lemon—and instead of delivering a punch of pucker-inducing tartness, it tastes as sweet as lemonade.

For the past two years, Associate Professor of Neurobiology Dr. David Lin and a team of graduate student volunteers from the Biology and Biomedical Sciences (BBS) program have delighted local elementary and middle school students with this experience through the Fall Into Science K-12 outreach program, piquing their interest in the science behind it. “We’re trying to get to kids’ minds through their stomach,” says Lin.

As part of the Taste Lab experiment, the children learn about the anatomy of their tongue and taste receptors and their connection to the brain before trying foods with sweet, salty, sour, bitter, and umami flavors. The highlight is sucking on miracle berry tablets that turn tang to sweetness, as the fruit’s glycoprotein miraculin activates sweet receptors at low pH levels, as created by lemon juice.

“That really blows the students’ minds,” says Erin Hammes, a fourth-grade teacher at Cayuga Heights Elementary School in Ithaca. “They almost always throw the whole lemon slice in the mouth and grin. It’s a blast to watch them experience this and to have that level of energy and engagement in the classroom.”

Such enthusiasm is infectious. Since its inception, Fall Into Science has more than tripled its number of volunteer instructors to 24 and begun cooperations with at least two more elementary schools.

In April, Lin’s team will also bring additional workshops to Expand Your Horizons (EYH), an annual Cornell-based conference within the national EYH non-profit network, aimed at sparking interest in STEM careers among middle and high school girls.

Building on the success of last year’s “Going Viral”—a module that shows participants how germs are spread and the role scientists, politicians, and health care providers play in stopping them—two new modules, “Home Cooked Chemistry” on the science of cooking and “Cell City Relay,” which has students play the parts of cell components, will make their debut.

Fall Into Science is funded by the Graduate School and grew out of Lin’s experience co-teaching a first-year graduate student course on careers in life sciences and grant-writing, where he learned that many students had been involved in outreach activities in college.

“It was pretty clear that this is something that they believed in very strongly, and I felt like they should be able to continue this in graduate school,” he says.

Today, volunteers include first-year as well as seasoned graduate students, who draw on their expertise in chemistry, biochemistry, molecular and cell biology, as well as biology and biomedical sciences to create the program’s broad range of outreach activities.

“Taking our own research projects and turning them into novel hands-on activities and mini lessons for K-12 groups has been fulfilling,” says BBS graduate student Ezen Choo, on whose work the Taste Lab is based. “And I think it’s

important, because it gives us a chance to practice communicating to the general public.”

In the classroom, in particular, the graduate students hope to serve as role models to inspire their young audience to consider a future in science.

Volunteer Melissa Toledo, also a student in the BBS program, points out that this age is a “prime time” for introducing children to science, crediting her own love for the field to early exposure at home and in middle school.

“They are open to learning and have few biases against science,” she explains. “I hope that they will see STEM fields as a life opportunity and more than just a cool erupting volcano.”

If the response from Erin Hammes’ fourth-grade class is any indication, their efforts to make science accessible are meeting with success.

“It’s a great program and the students love it,” Hammes says. “I hope to have Dave Lin and his volunteers come back year after year.”



IMPACT

BELOVED PETS SPARK SCHOLARSHIP FUND

By Sherrie Negrea



FRANCES D'AMBROGIO

Frances D'Ambrogio, a 96-year-old retiree in Brooklyn, had two loves of her life: her dachshund and her Siamese cat. When it came time to plan her estate a decade ago, she wanted to find a way to honor her beloved pets.

With the advice of her financial advisor, D'Ambrogio decided that a scholarship at the Cornell College of Veterinary Medicine would be the best way to memorialize her pets. Last fall, D'Ambrogio decided to add another contribution so that the scholarship could become endowed and she could see the impact of her donation during her lifetime.

"I loved that dog and cat so much, I figured I had to do something to extend my feelings for them," D'Ambrogio says. After discussing her idea with her financial advisor and friend, Harold Wilshinsky, he suggested she endow a scholarship at Cornell since it has the only veterinary college in the state.

The first recipient of the scholarship will be Erica Lachenauer, a second-year graduate student earning a DVM and a PhD in comparative biomedical science. Lachenauer, who will receive the scholarship next fall, says she is interested in working in laboratory animal medicine and research after graduation.

"I feel honored that I was chosen and that I will be able to use the money towards my research," Lachenauer says. "It will help me focus more on my research rather than trying to get grants to fund me."

"I LOVED THAT DOG AND CAT SO MUCH, I FIGURED I HAD TO DO SOMETHING TO EXTEND MY FEELINGS FOR THEM."

—FRANCES D'AMBROGIO



ERICA LACHENAUER '18

A LEGACY OF LOVE FOR ANIMALS

By Mike Carroll



EDITH WILSON

The College has received a \$1.281 million bequest from the estate of Edith Wilson, which will support DVM or graduate students, as well as support the Cornell University Hospital for Animals.

Born in Austria, Wilson later moved to America, marrying Doug Wilson. Throughout her life, Wilson had an abiding love for animals. It was this passion that led to her gift to Cornell

University College of Veterinary Medicine, despite having no direct connection to the College. Her long-time friend, accountant, and executrix of the estate Maxine Saft suggested Wilson make a gift to Cornell, which led to The Edith and Douglas Wilson Scholarship Fund at Cornell University College of Veterinary Medicine. "She was a wonderful person that adored animals," says Saft. Wilson also supported several other local animal shelter and adoption centers.

Half of the bequest will support three to four students per year in the DVM or graduate programs, while the other half is earmarked for the mission of the Cornell University Hospital for Animals.

IN MEMORIAM

Since the Summer 2015 issue of 'Scopes, the College has been notified of the passing of the following:

Dr. Willard H. Daniels '49, November 23, 2015

Dr. David Engstrom '64, July 24, 2015

Dr. Donald C. Gay '62, June 11, 2015

Dr. Norman H. Goldstein '66, June 13, 2015

Dr. Charles N. Gould '59, October 14, 2015

Dr. John H. "Jack" Graves '47, May 24, 2015

Dr. Frank L. Krohn '55, March 10, 2015

Dr. David E. Lawrence '44, November 1, 2015

Dr. Wendell K. Loomis '52, June 9, 2015

Dr. Janet Meade MacCallum '46, February 19, 2016

Dr. Douglas F. McBride '55, January 17, 2016

Dr. John "Jack" McCormick '49, August 16, 2015

Dr. Robert C. Nelson '53, January 15, 2016

Dr. Keith H. Orts '59, June 30, 2015

Dr. Joseph P. Renaldo '61, May 8, 2015

Dr. Donald L. Robinson '71, October 12, 2015

Dr. Raymond Russo '42, July 2, 2015

Dr. George "Nick" Schatzle '59, April 18, 2015

Dr. Myron G. Schultz '58, February 19, 2016

Dr. Henry Szlachta '50, April 19, 2015

Dr. John Weeks '51, April 25, 2015

Dr. Stanley A. Witzel, Jr. '57, June 5, 2015

Dr. Merritt B. Wooding '61, August 1, 2015

Dr. James C. Zgoda '85, February 10, 2016

Clinic Memorial Giving Program

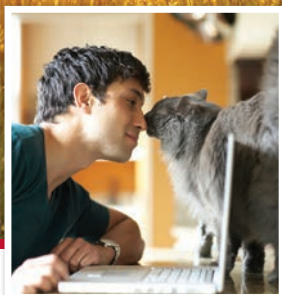
To make a donation, visit our website:
vet.cornell.edu/Giving/ClinicMemorials.cfm

Remember your client's beloved pet with a contribution to one of our memorial programs.

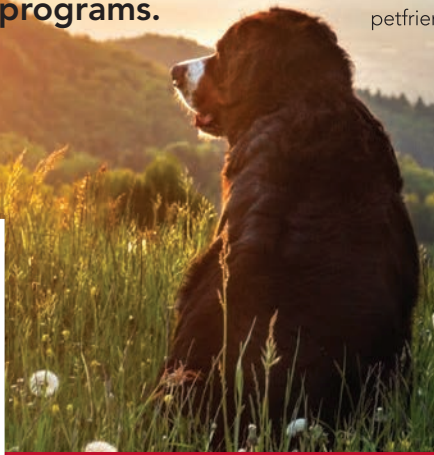
Or contact our Office of Alumni Affairs and Development
607-253-4310
petfriends@cornell.edu



College of Veterinary Medicine



Cornell Feline Health Center



Baker Institute for Animal Health

Reunion

Calling all DVM Alumni from
Classes Ending in 1s and 6s:
Join your Friends!

IT'S about remembering your first surgery. Getting to know the people in your tutor groups. All those late night study sessions. Reading textbooks written by **YOUR** professors, then reading them three more times. Going to SCAVMA meetings for the free food. Trying to remember every differential diagnosis on rotations. Panicking about passing exams. Putting on your white coat in third **YEAR**.

Mark your calendar for Reunion on **JUNE 9-12, 2016**.
Enjoy the camaraderie of old friends and see new and old spaces at the veterinary college.

Register now at bit.ly/CVMReunion16

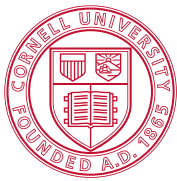


END NOTE





THE WORLD'S FIRST IVF PUPPIES, BORN AT CORNELL, REPRESENT A SCIENTIFIC BREAKTHROUGH. DESCRIBED IN A STUDY PUBLISHED ONLINE DECEMBER 9 IN THE JOURNAL *PLOS ONE*, THESE PUPPIES OPEN THE DOOR FOR PRESERVING ENDANGERED CANID SPECIES USING ASSISTED REPRODUCTION TECHNIQUES. THE DISCOVERY COULD ALSO ENABLE RESEARCHERS TO ERADICATE HERITABLE DISEASES IN DOGS AND FACILITATE THE STUDY OF GENETIC DISEASES IN BOTH DOGS AND HUMANS.



Cornell University
College of Veterinary Medicine

Box 39
Ithaca, NY 14853

NON-PROFIT ORG.
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CONGRATULATIONS TO THE CLASS OF 2017 ON THEIR WHITE COAT CEREMONY

White Coat is a time-honored ceremony that marks the transition from the pre-clinical to the clinical portion of a student's veterinary educational training. During this rite of passage, students each receive a white coat—the symbol of professionalism and empathy in medicine—from a professional mentor who has provided support and encouragement along the way.

