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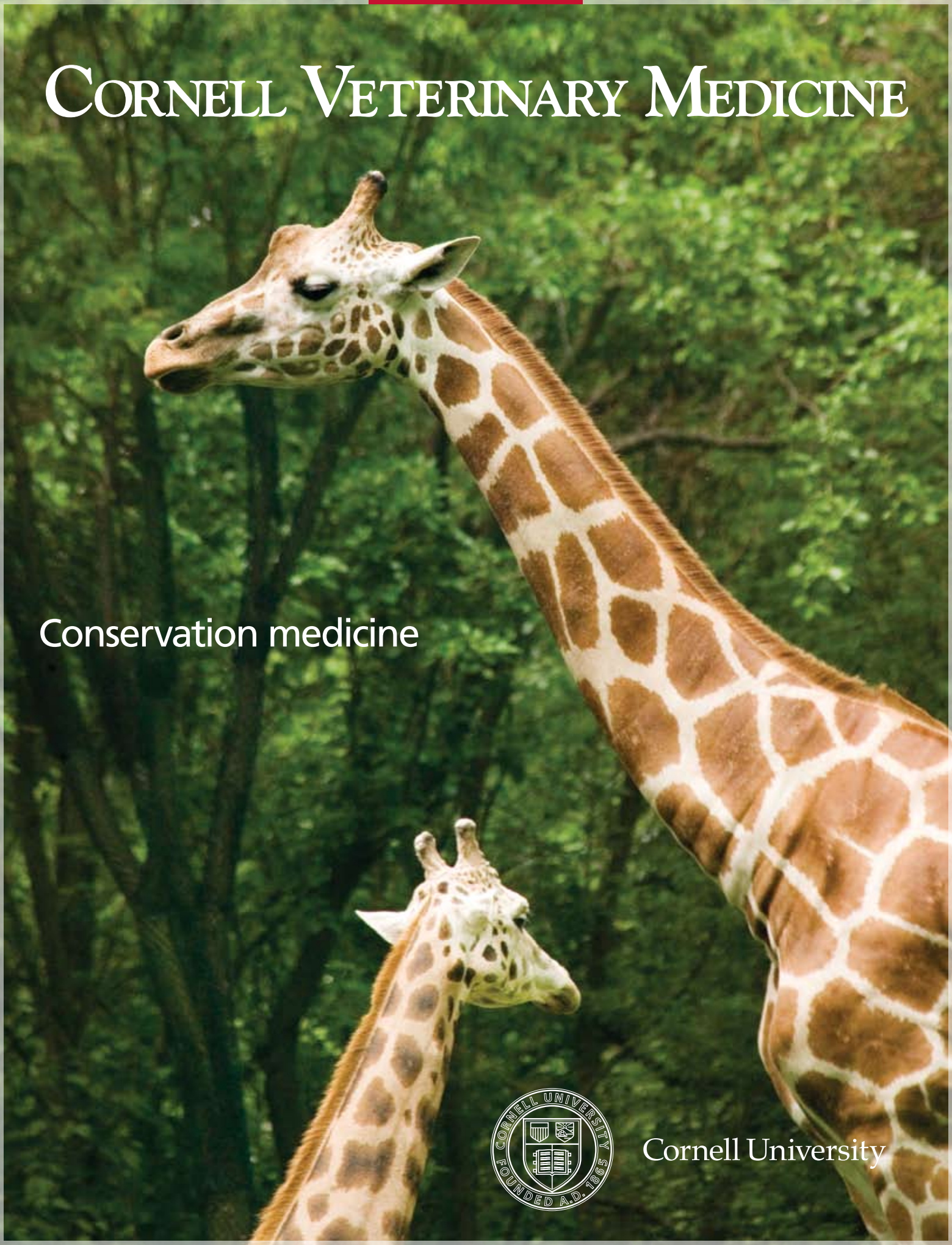
Cornell Veterinary Medicine



Conservation medicine

Cornell University

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On the cover: Giraffes at the Bronx Zoo. This page: peacocks at the Bronx Zoo.

Joining Forces
in Conservation and Medicine
The Wildlife Conservation Society and Cornell

BY METTA WINTER

"The WCS-Cornell joint residencies provide all the advantages of a university-based medical residency and the large caseloads of a diverse, mixed-zoological practice involved with both captive and free-ranging animals from around the world."

Two new residency programs in zoological medicine and wildlife pathology merge the academic medical strengths and scientific rigor of Cornell University's College of Veterinary Medicine with the applied expertise and diverse wildlife collections of the zoological parks of the Wildlife Conservation Society (WCS). Both the sponsors and prospective participants are impassioned about the potential of the dual residency programs. The collaboration, a rare partnership between a leading institute of higher education and a major international nongovernmental organization, emphasizes the core concept of one world, one health.

The residencies, announced recently, are among several collaborative programs being undertaken by the two New York institutions. The partner projects are a natural extension of the strong overlapping interests and missions of Cornell and WCS in the areas of wildlife health and conservation.

"I have long hoped to meld the talents of our two organizations to train the next generation of leaders in wildlife health," says Robert A. Cook, chief veterinarian and vice president, Wildlife Conservation Society. "With the initiation of the

Veterinarians at the WCS Wildlife Health Center at the Bronx Zoo examine a baby Geoffrey's tamarin.

James Morrisey discusses a case in Cornell's exotic and wildlife medicine clinic with visiting veterinary student extern Vanessa Alerte from the National Veterinary School of Toulouse, France.

At the Bronx Zoo, *gelada* baboons enjoying the day and (above, right) a lesser adjutant stork out for a walk.

"One of the most interesting and satisfying parts of practicing here is the tremendous diversity—there's no such thing as routine."

residency programs we have made a major commitment to the future health of people, domestic animals, and wildlife—what we refer to as 'one world, one health.'"

Alfonso Torres, the college's associate dean for veterinary public policy and executive director of the Animal Health Diagnostic Laboratory says: "These residencies offer a remarkable experience and will result in the formation of professionals who will have worked with and learned from the best of science and the best of professional practice—something that no other institutions provide."

Each residency is a three-year program with time in Ithaca and New York City. At Cornell, immersed in the academic environment of the college and university, residents will receive extensive training in their veterinary clinical specialties and will interact with basic scientists; at the large, urban facilities of the WCS, they will have an enormous collection of wildlife with which to work as they hone diagnostic and practical expertise.

"The WCS-Cornell joint residencies provide all the advantages of a university-based medical residency and the large caseloads of a diverse, mixed zoological practice involved with captive and free-ranging animals from around the world," says Paul Calle, senior veterinarian in the Department of Clinical Care at the WCS Wildlife Health Sciences Division.

THE CLINICAL RESIDENCY

This past July, Timothy Georoff became the first veterinarian in the Cornell University/Wildlife Conservation Society Zoological Medicine Residency Program.

"This is a tremendous opportunity for me," says Georoff, who had completed an internship at the Tulsa Zoo and Living Museum. "I'm looking forward to all that the terrific faculty and staffs at Cornell and WCS have to teach me," says Georoff. "I'll benefit from the tremendous amount of experience they've had, all the places they've trained, and the knowledge they bring from their many different backgrounds."

In Ithaca

"WCS chose to collaborate with Cornell's College of Veterinary Medicine on this joint residency because of its excellence in academic wildlife and zoological medicine curricula, one of the leading programs in the country," says Calle.

Zoological medicine residents will learn from numerous Cornell experts, including veterinarians George Kollias, who is director of Cornell's Wildlife Health Program and board-certified in zoological medicine, and program instructors Noha Abou-Madi, board-certified in zoological medicine, and James Morrisey, board-certified in companion and exotic animal medicine.

Residents also will have the opportunity to work side-by-side with Cornell specialists in epidemiology, imaging, pathology, surgery, anesthesia, ophthalmology, dermatology, internal medicine, orthopedics, reproduction, and other fields. For example, this fall, in collaboration with Alex Travis, associate professor of genetics and reproduction, Kollias and Abou-Madi are introducing a new course, Conservation Medicine. Students will explore the concepts of free-ranging and captive wildlife biodiversity conservation, as well as sustainable development issues that relate to wildlife.

While at Cornell, residents will complete course work relating to the biology, husbandry, and medical management of fish, amphibians, reptiles, birds, and mammals. Course work and rounds will be reinforced by clinical experience—about two-thirds of this experience will be working in the exotic and wildlife medicine service at the Cornell University Hospital for Animals, where 1,400 cases are treated annually. The caseload is diverse and challenging, says Kollias—referring veterinarians from the Northeast send the most complex cases to Cornell. On a given day, residents might find themselves using radiation therapy to treat cancer in a hedgehog or performing complex orthopedic surgery on a bald eagle that has been shot.

During the other third of their clinical experience at Cornell, residents will assist Kollias and Abou-Madi in caring for the 500 animals and 125 species at the Rosamond-Gifford Zoo in nearby Syracuse, New York. The zoo is involved in a number of Species Survival Plans—in collaboration with the Association of Zoos and Aquariums—including those for the red panda, Asian elephant , snow leopard, and Humbolt penguin.

"The residents will have broad medical knowledge with strong clinical experience in their toolbox by the time they leave for the WCS component of their program," says Abou-Madi.

In the Bronx

In New York City, the zoological medicine residents will practice what they've learned in the five WCS zoological parks—the Bronx, Central Park, Queens, and Prospect Park zoos, and New York Aquarium. Each has a distinct collection (the Queens Zoo has primarily North American species; the aquarium mostly aquatic animals) and size—from more than 4,000 animals at the Bronx Zoo to 750 animals at the Prospect Park Zoo.

George Kollias examines a sloth at the Rosamond-Gifford Zoo as Stacy Choczynski, Cornell DVM Class of 2008, looks on. (left) A zebra at the Bronx Zoo.

A Wolf's guenon (left) and a cheetah (below), resident animals at the Bronx Zoo.

"One of the most interesting and satisfying parts of practicing here is the tremendous diversity—there's no such thing as routine," says WCS's Calle.

Residents are headquartered at the newly expanded 32,000-square-foot Wildlife Health Center, the primary care facility for more than 20,000 animals in the five WCS zoological parks. They will work with four board-certified zoo practitioners and three full-time wildlife pathologists on all cases of routine and emergency medical and surgical care. A typical day might include attending to a neonate gazelle calf in intensive care at the hospital in the Bronx Zoo, driving to Coney Island to conduct an eye exam on a walrus and treat a shell wound on a sea turtle, then on to Central Park to check on a lethargic macaque, returning to the Bronx to monitor the progress of an anorexic bear, perform a surgical repair of a laceration on a monkey, or take radiographs of a wild hawk with an injured wing. Resourcefulness is challenged on both ends of the scale, as medication must be administered to animals such as a 2,500-pound giraffe, a 30-gram lizard, and all sizes in between.

Opportunities for learning abound. Because the care these animals receive is outstanding, many live long lives and develop diseases of aging such as diabetes or cancer. "There are many animals 40 years of age or older—gorillas, turtles, birds, crocodilians," says Calle. "We manage arthritis in every species from lions to tigers to bears."

In the 17 years that Calle has worked with WCS, he's seen zoological medicine mature into an independent profession. "We live in a world of vanishing wild lands—there is more and more conflict for space and resources among domestic animals, wild animals, and people," he says. "Zoological veterinarians are in a great position to apply what is learned from zoological species in zoos and aquariums to field situations where there are animal and human disease issues."

The potential of comparative medicine is a cornerstone of the Cornell-WCS collaboration, explains Donald F. Smith, dean of the college: "The Cornell and WCS programs complement each other in their strengths." For example, Cornell has the best group of reproductive scholars in any veterinary college. Residents will study with faculty members who have expertise in areas from genomics through clinical reproduction. WCS has active captive-breeding programs in hundreds of species—including gorilla, radiated tortoises, and birds of paradise. Residents will learn to become adept at using different types of contraceptive techniques to manage reproduction to ensure the best genetic diversity of a population.

At Cornell, zoological medicine residents can engage with experts in veterinary medicine, biomedical sciences, and basic sciences to study the biological systems and health needs of diverse species throughout the world. The Wildlife Conservation Society has more than 400 field conservation projects in 60 nations—the wildlife health components of these projects are provided by the WCS Health Sciences Field Veterinary Programs. In New York City, the residents will have the opportunity to interact with the field veterinarians working on these projects and with other prominent conservationists at WCS headquarters at the Bronx Zoo.

THE PATHOLOGY RESIDENCY

Thanks to new technologies, the planet is shrinking, and the way in which animals and people now move around the globe allows a disease that occurs in one region to spread rapidly to another—this includes not only novel or emerging diseases but also common ones like foot-and-mouth disease.

"Disease outbreaks can be national security issues, and veterinary pathologists are the experts who know how to handle them," says Elizabeth Buckles, assistant professor of pathology in the college's Department of Biomedical Sciences. Veterinary pathologists are increasingly recognized as the front line in disease surveillance in wildlife populations, ever on the lookout for emerging or reemerging diseases that impact not only wildlife but domestic animal health and human health, as well.

This past July, Melissa Czajkowski became the first veterinarian in the new Cornell University/Wildlife Conservation Society Anatomic Pathology Residency Program. Czajkowski had just completed the first two years of her pathology residency at Cornell before beginning her work at WCS.

The residency will provide residents with exceptional training for a broad range of career opportunities in veterinary pathology and will teach the skills needed for achieving certification by the American College of Veterinary Pathologists.

At Cornell

Pathology residents will spend the first two years on the Cornell campus, focusing on the comparative anatomy and diseases of domestic animals. They will gain additional experience from cases involving the animals that the college's Wildlife Health Program veterinarians treat in the Cornell University Hospital for Animals, where referring veterinarians send the most challenging cases from around the state and region, and at the Rosamond-Gifford Zoo in Syracuse.

While they are at Cornell residents will study with the six anatomic pathologists on the veterinary faculty, each of whom is board certified by the American College of Veterinary Pathologists—Drs. Ana Alcaraz, Elizabeth Buckles, Sean McDonough, Bradley Njaa, Rachel Peters, and Don Schlafer. They represent a variety of interests and areas of expertise, including infectious diseases, cancers of blood cells, ocular diseases, poultry pathology, laboratory-animal pathology, identification of parasites, wildlife diseases, and reproductive pathology. Residents also will consult with Cornell faculty members in other departments who specialize in other areas, such as dermatologic diseases, diseases of fish, or liver disease.

"We use a case-based, comparative approach to give our residents a solid understanding of how to diagnose disease in any setting and any animal species, whether it's a horse or a wombat," explains Buckles.

At Cornell the residents will see a wide variety of cases from a wide range of animals. They will participate in both the post-mortem service and biopsy service. On any given day on post mortem, the resident might need to determine the cause of mortality in a herd of dairy cattle, the cause of death of a pet dog or cat, or the cause of an abortion of an equine fetus. On surgical service they will examine tissues submitted from clinicians around the state. First-year residents will see approximately 75 necropsy cases and 750 biopsies; second-year residents will see at least 100–125 necropsies and 1,000 biopsies.

(far left) Senior Veterinarian Bonnie Raphael and Heidi Zurawka, a senior resident, examine a turtle in the WCS Wildlife Health Center at the Bronx Zoo. (left) Beth Buckles reviews a pathology case at Cornell.

Pathology resident Melissa Czajkowski at Cornell.

Since the caseload is so diverse, explains Buckles, the faculty emphasize a comparative approach to pathology—the residents must understand the basic principles of disease pathogenesis and tissue reaction to injury and then apply those principles to diagnose specific diseases in individual animals. Residents learn how to collect tissues to send for further laboratory testing (bacteriology, virology, parasitology, toxicology) and how to recognize diseases with potential consequences to herd health or human health. Case work is augmented by a variety of rounds and journal clubs to help hone diagnostic skills. Additionally there are a variety of opportunities to interact with clinical faculty. While on biopsy duty, the residents meet daily with clinicians to discuss cases of patients in the Cornell University Hospital for Animals. During monthy tumor board, residents and clinical and pathology faculty meet to discuss clinical management and diagnosis of cancer; monthly zoo and wildlife rounds provide opportunity for residents and clinical and pathology faculty to discuss special topics and cases relevant to non-domestic animals.

At the WCS

Exotic animal and wildlife pathology probably didn't register on most people's radar screens as a specialty of much importance when wildlife pathologist Dee McAloose began her specialty training more than a decade ago. However, the occurrence of a disease outbreak in the late 1990s changed that. It was her predecessor as head of the WCS Department of Pathology, Tracy McNamara, Cornell DVM '80, who pursued and identified West Nile virus as the cause of bird deaths in New York City in 1999. West Nile virus was subsequently recognized as the cause of human illnesses and deaths occurring at the same time.

"As wildlife pathologists we are trained to identify emerging or novel diseases as well as common ones. Thus we were able to correctly diagnose a disease that was new to the Western Hemisphere and to alert others across the country to West Nile virus in time for them to implement protocols and practices to protect animals and people," McAloose says.

The enormous diversity at the WCS's zoological parks will offer endless opportunities to wildlife pathology residents during the third year of their residency, spent at the Bronx Zoo. Under the supervision of three WCS pathologists—McAloose and Julie White (both certified by the American College of Veterinary Pathologists) and Carlos Rodriguez—residents will participate in nearly 1,000 necropsy procedures performed on collection animals, native wildlife, and field cases each year. They will focus on the comparative anatomy, histology, and diseases of hundreds of different species.

"At Cornell, if a resident is interested in brains or kidneys or livers, they have access to experts in each of those organ systems," McAloose explains. "And at the WCS in New York, they have access to experts in birds or frogs or gorillas."

Residents also will become familiar with issues in relationship to animal health and disease transmission in zoological collections and wildlife. Most zoo exhibits consist of natural groupings of animals (Gelada baboons, Rock Hyrax, and Nubian ibex in the African Plains exhibit at the Bronx Zoo, for example), so there are issues of herd health to study. Because zoo animals are often outdoors, pathologists and residents also must be vigilant for infectious diseases of native and migratory wildlife that could impact animals in the collection.

Pathology residents also will learn how vital vigilance is to preserving endangered species—many of the 4,000 animals at the Bronx Zoo are among endangered species, including, for example, 100 Kihansi spray toads, half the known number in the world. The residents will contribute to documenting diseases in exotic animal and wildlife species—even incidental ones that may not have caused death—for which limited information presently exists.

Bi-monthly the residents will meet with veterinary, clinical, and laboratory-animal pathologists and residents from the Animal Medical Center, Memorial Sloan-Kettering Cancer Center, Albert Einstein College of Medicine, Pfizer Inc., and other hospitals and laboratories to review diagnostically challenging cases.

"I'm excited about the program," says McAloose. "Coming from Cornell, the residents will have excellent diagnostic skills and hit the ground running when they arrive here at WCS."

Biodiversity Conservation in Zambia

BY METTA WINTER

Food Security Looks Like the Answer

A grant for a program to increase food security and economic self-sufficiency in Zambia is the flagship project for the international field component of the new partnership between the college and the Wildlife Conservation Society.

In 1970, 6,000 black rhinos roamed the lush Luangwa Valley, Zambia's most valued wildlife area. By the late 1980s, they were almost completely exterminated from the area. The fate of Luangwa elephants is no better. In the last 35 years, the number of elephants in the valley has decreased from 90,000 to only 15,000. Each year between 3,000 and 4,000 animals in the Luangwa region—antelopes, elephants, lions, buffalo, wildebeest, leopard, and hyenas—fall prey to the guns and wire snares of farmers. Why? Between 20 and 60 percent of the 17,000 families living in this valley regularly don't have enough to eat. When crops fail due to the region's intermittent droughts, farmers revert to poaching, which becomes the only dependable means of putting food on the table. But that situation is changing thanks to Community Markets for Conservation (COMACO), a novel program that promotes biodiversity conservation by helping to alleviate poverty and food insecurity. The program, which recently completed its pilot phase throughout 20,000 square kilometers of the Luangwa watershed, is the brainchild of conservation zoologist Dale Lewis, the Wildlife Conservation Society (WCS) director for Zambia.

On January 1, Cornell became a key partner in the ongoing venture, with a $1.2 million grant from the United States Agency for International Development (USAID) to support research for the program. Under leadership from the college, a dozen Cornell scientists will help WCS and community participants in Zambia determine how to optimize the promise of the COMACO model, increasing the chances that both the animals and the humans of southern Africa will thrive.

The USAID grant is the result of a proposal written jointly by scientists from Cornell and WCS—Alexander Travis, assistant professor of reproductive biology at the college's Baker Institute for Animal Health; Alfonso Torres, the college's associate dean for veterinary public policy and executive director of the Animal Health Diagnostic Laboratory; WCS's Lewis; and Steve Osofsky, Cornell DVM '89, the WCS's first senior policy advisor for wildlife health in its Field Veterinary Program.

"TheCornell-WCS collaboration in the COMACO program will apply scientific knowledge and technologies to solve basic nutritional and economic needs of people while preserving their wildlife and natural environmental resources," explains Torres. Cornell's interest in the program, Torres adds, is also linked to its campus-wide initiative to promote sustainability in its teaching, research, and outreach.

Osofsky acted as a linchpin—he was in the right place at the right time to help introduce the COMACO program to his alma mater, which he had long encouraged to become more involved in international wildlife conservation. During the past year, Donald F. Smith, the Austin O. Hooey Dean of the college, and Robert A. Cook, WCS chief veterinarian and vice president, engaged in a number of conversations about various potential collaborations. During this time Osofsky became aware of a new source of research funding supported by USAID through the Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program.

"I was looking for university partners that would have the right mix of interdisciplinary expertise to assist the conservation project in Zambia," Osofsky recalls. He quickly realized that Cornell was the right choice. He also knew Travis, who had done a wildlife conservation preceptorship with him many years ago. Osofsky knew that Travis shared his conviction about the leadership role veterinarians could play in fostering an interdisciplinary approach to biodiversity conservation and that Travis was keen to apply his training and experience in the international arena.

It's clear that the two most often-cited strategies for bolstering biodiversity conservation—law enforcement to control poaching and ecotourism to bring in dollars—haven't always worked, Travis explains. "Anti-poaching patrols aren't effective by themselves if they set up a conflict between the interests of people and animals so that conservation is seen as an enemy instead of an asset," he says. About ecotourism, thought 20 years ago to be the answer, he adds: "We've found there aren't always enough rich ecotourists to go around."

Lewis agrees. What's needed, he says, is a conservation model rooted in the sound economic principles that govern business: increasing production and markets, decreasing transportation costs, and promoting value-added products. That is the model on which COMACO is based. The program's staff give farmers guidance and incentives to farm in a sustainable way, as well as membership in a cooperative that transports and markets their products in bulk at regional centers. These factors combine to yield a much higher price than if the farmers had sold the products on their own.

In the pilot phase of the program, completed recently, farmers' profits increased dramatically for two traditional commodities—chicken (by 80 percent) and rice (30 percent)—and one newly introduced value-added product, honey (67 percent). WCS surveys show that 60 to 80 percent of households participating in the pilot phase of the program have had an increase in food security. As a result of increased production and food security, the amount of poaching has declined. In order to participate in the program, farmers must turn in their wire snares and guns—more than 35,000 and 700, respectively, were collected during the pilot phase. Ongoing field data from the Zambian Wildlife Authority show that the number of snares observed on the ground continues to decrease dramatically. Concurrently, ground and aerial tracking of lion, buffalo, water buck, zebra, eland, hartebeest, puku, and roan antelope in the valley show that their numbers are on the rise.

Much is at stake. If the conservation project is successful in Zambia, the program could be scaled up and expanded into neighboring countries.

The four-year USAID-funded project will continue the work of the pilot phase, using a multifaceted economic model that links the well-being of animals and humans. "Nothing is imposed from the outside—the program is all about community participation and building host-country capacity," says Travis.

The project brings together the expertise of faculty members from Cornell's College of Veterinary Medicine and College of Agricultural and Life Sciences—they will work in teams to examine and address specific problems and evaluate the results of adopted improvements.

The team's first concentration is poultry production. Most families in the Luangwa Valley have chickens, but the vast majority of the poultry die before sale. "Before we went to Zambia for our planning visit in 2005, we thought Newcastle disease was responsible for most of the losses, but we found the situation likely went beyond that," says Travis.

The team is addressing problems in poultry production and husbandry, including nutrition and coop design. Cornell veterinary students who have received training in poultry medicine, parasitology, and pathology will spend 10-week blocks working on these issues. This past summer, the college's Expanding Horizons Program sponsored Erin McDonald, DVM '08 in Zambia. She accompanied local extension officers and helped to train them as veterinary para-professionals who can perform basic clinical observations and gross morphological post-mortem examinations. A virtual diagnostic laboratory allows the para-professionals to send digital images to off-site poultry experts and veterinary pathologists for disease identification and treatment recommendations.

Travis hopes that this project will open the door to many more collaborations with WCS, which has field projects in more than 53 countries. "As a research university, Cornell has the dual mission of discovering new knowledge and educating students. Our partnership with WCS will allow us to fulfill both these goals in a real-world setting in a way that will advance biodiversity conservation—so that rural Zambians and the wildlife all benefit," he says.

Pictured here visiting local Zambians in the Luangwa Valley in summer 2005 are a multidisciplinary team of scientists from Cornell and the Wildlife Conservation Society: Michael Kock (standing, left) and Steve Osofsky (standing, right)—from WCS; and Alfonso Torres (seated, left), John Fay (seated, right, arms crossed), Alexander Travis (standing, center, back row), and Benjamin Lucio-Martinez (standing, right of center)—from Cornell. The gentleman with his hand raised is a former poacher who now uses his knowledge of the wildlife to guide tourists to see the animals. The smiling woman (standing, center row) has been selected by the local community to manage the first ecotourism lodge in the valley.

IT TAKES A UNIVERSITY

A dozen Cornell faculty members, representing a broad range of expertise from disciplines across campus, play a primary role in the conservation project in Zambia:

Elizabeth Buckles, assistant professor of pathology in the Department of Biomedical Sciences (veterinary pathology and disease diagnosis)

Duane Chapman, professor of applied economics and management (natural resource economics and valuation)

Jon Conrad, professor of applied economics and management (economic evaluation of disease control and husbandry changes)

Parfait Eloundou-Enyegue, assistant professor of development sociology (issues of gender, HIV, and demographics)

John Fay, MBA '04, consultant referred through the Center for Sustainable Global Enterprise at the Johnson Graduate School of Management (business economic assessment and optimization)

Peter Hobbs, adjunct professor of crop and soil sciences (introduction of new food crops)

Johannes Lehmann, assistant professor of crop and soil sciences (soils and organic matter recycling)

Benjamin Lucio-Martinez, poultry extension veterinarian in the Department of Population Medicine and Diagnostic Sciences (poultry infectious disease and husbandry)

Carmen Moraru, assistant professor of food science (food product processing and development)

Alice Pell, professor of animal sciences and director of the Cornell Institute for Food, Agriculture and Development (ruminant nutrition and husbandry)

Alfonso Torres, associate dean for public policy (livestock veterinary diagnostics, disease surveillance, and governance)

Alexander Travis, assistant professor of reproductive biology (overall coordinator of research and assessment of biodiversity outcomes)

Leadership in Clinical Programs

Patient care, education, and scientific innovation

BY ROGER SEGELKEN

The Cornell University Hospital for Animals and the Department of Clinical Sciences have taken the lead in offering advanced patient care services, assuring the breadth and depth of clinical care that animal owners expect at a preeminent veterinary medical and research institution. Few, if any, veterinary teaching hospitals can match Cornell's commitment to a full range of newly established specialty services—including advanced dental services, emergency and critical care, neurosurgery, chronic pain management, and shelter medicine—as well as expanded specialty services with acknowledged excellence—imaging and radiology, minimally invasive surgery, and community practice, for example. At the same time, the Department of Clinical Sciences has launched a forward-looking Medical Genetics Initiative.

ENDODONTICS, ORAL SURGERY, AND ORTHODONTICS, TOO

DVM students in the College of Veterinary Medicine, as well as hospital clients with companion, large, and exotic animals, benefit from Cornell's new emphasis on advanced dentistry, says Rodney L. Page, the Alexander de Lahunta Chair of Clinical Scie nces. The hospital's veterinary dental service, led by Jennifer E. Rawlinson, now offers a full spectrum of endodontic care—vital pulp therapy, root-canal therapy, apexification, and apexogenesis, periodontics—everything from dental prophylaxis and gingivectomy to periodontal splinting and alveolar bone augmentation.

Oral surgery procedures begin with the expected, like extractions, and extend to the most specialized—including cleft-palate surgery and laser resection of soft palates, maxillectomy and mandibulectomy, oral fracture repair and trauma management, salivary gland surgery, and temporomandibular joint surgery. Orthodontic services at the Cornell University Hospital for Animals include bite evaluation and genetic counseling, interceptive orthodontic therapy, corrective appliance fabrication and installation, and active orthodontics utilizing brackets, buttons, and elastic chains. Cornell's operative and restorative dentistry services—crown restorations, crown bonding, full and three-quarter jacket crowns—serve more than cosmetic purposes, according to Rawlinson. "A police dog with a broken canine tooth can't do its job," she says.

Jennifer Rawlinson and a feline patient in the dentistry service at the Cornell University Hospital for Animals.

While dogs and cats make up most of the patient load in the veterinary dental service, specialists there are prepared for exotics and large animals, too, with facilities for small-animal oral radiography, extractions and occlusal adjustment, carnivore extractions and endodontic therapy, primate dentistry, and herbivore extractions and occlusal adjustment.

NEUROLOGY, NEUROSURGERY, AND NEW PROTOCOLS

Some of the hospital's services in neurology and neurosurgery are only possible at an institution with a strong research base, according to veterinary neurologist Curtis W. Dewey. Patients suffering seizures, for example, may be eligible to enroll in clinical trials of anticonvulsant drugs, such as zonisamide or levetiracetam. Among other clinical questions, the Cornell trials examine alternative means of administration—intravenous or rectal—for anticonvulsant drugs in animals who cannot be given oral medications (e.g., as an emergency treatment in an actively seizuring patient).

Many of Dewey's neurosurgical cases involve removal of brain tumors, but he also is trying to advance the state of the art in diagnostic screening tests for neurologic disorders before clinical signs appear. Among other innovative means, he is testing the use of electrodiagnostic measurements of brain waves for syringohydromylelia (also known as caudal occipital malformation syndrome or COMS) in dogs. Advanced stages of COMS, when the disease is painfully debilitating for dogs, can be forestalled with early diagnosis and treatment, according to Dewey, who hopes that brain-wave diagnosis will be useful as an early screening test for the disease. As many as 70 to 80 percent of Cavalier King Charles spaniels may have a genetic predisposition for COMS, he notes, and access to a relatively inexpensive screen would be appreciated by Cavalier owners and breeders.

Curtis Dewey examines a neurology patient at the Cornell University Hospital for Animals.

BANKING ON DNA

If animal owners give their consent—and their purebred animals give a little blood while visiting the Cornell University Hospital for Animals—both parties will be contributing to a potentially valuable knowledge base: the Cornell Medical Genetics Archive.

Essentially a DNA bank for clinical researchers studying the genetic basis of a variety of inherited diseases—including cancers, liver disease, bleeding disorders, endocrinopathies, cardiac disease, orthopedic disease, and even behavioral problems—the bank will yield dividends for the depositors as well.

"The reward for becoming a volunteer is knowing that your animal is helping us investigate inherited diseases," Marta Castelhano, post-doctoral associate in clinical sciences, tells animal owners who are undecided about participating. "The information from this archive will help to develop new genetic tests for many inherited problems and possibly develop new therapeutics for diseases."

Originally envisioned by veterinary orthopedic specialist Rory Todhunter as a canine genetic archive with a focus on orthopedic diseases, the DNA bank's mandate has expanded to include cats, horses, cattle, and exotic animals with a much wider range of specific diseases. Expert veterinary technical help and the enthusiasm of the staff are what makes the endeavor work. Since February when the bank was established, DNA from more than 400 animals has been banked.

"Our strategy is to have the right DNA and medical-record samples in hand to find genetic markers that are linked, or associated with, the trait or disease," Todhunter says. "Once verified, that link could lead to a genetic marker test. Then we want to find either the bad forms of the gene (alleles) that contribute to the diseases—or, indeed, genes that offer protection against the disease. That will lead to improved biological understanding and better treatments—one of which is the possibility of gene therapy."

Currently the Cornell Medical Genetic Archive accepts only purebred animals. The modern breeds established 50 to 100 generations ago have the right genetic architecture for association mapping, which leads to gene identification. Pedigrees can help, too, so owners of dogs, for example, are asked to provide the animal's AKC number for verification.

And because any bank needs to keep the lights on, there are expenses. Funding to launch the Cornell Medical Genetic Archive was provided by the veterinary college's Department of Clinical Sciences, the Cornell University Center for Vertebrate Genomics, and the James A. Baker Institute for Animal Health. The genetic bank's founders are looking for additional financial support as the project expands.

EQUINE HEALTH ON THE GROWTH TRACK

In equine medicine, pioneering research initiatives are underway at Cornell in upper-airway health, immunology, reproduction, and orthopedic disease. Among researchers taking a molecular-biology approach to reproductive problems are Sylvia Bedford-Guaus and Marco Coutinho da Silva.

Supplementing the clinical and specialized research facilities in the Equine and Farm Animal Hospitals is the college's nearby Equine Park. Actually three sites comprising more than 200 acres and home to an average population of 100 horses, the park "is a near-perfect place to train future veterinarians by providing hands-on horse experience in a realistic farm setting," says longtime park direc-

Maria Flaminio checks on a foal and its mother in the Equine Hospital.

tor Carol Collyer. The Equine Park provides education, research support, and reproductive services that support the equine industry.

"We have the opportunity to substantially strengthen our equine programs by improving our facilities in order to more fully meet our missions of education, research, and service as we move into the future," says Richard P. Hackett, professor of surgery.

Equine health program leaders envision a comprehensive array of upgrades and facility improvements. DVM students and veterinarians attending continuing education programs benefit from recent additons that include a 35-person classroom, a reproduction laboratory for the handling and evaluation of semen and collected embryos; a small arena to accommodate approximately 25 students and instructors for demonstrations and hands-on practice of procedures such as physical examination, handling and restraint, and therapeutics in a laboratory setting; and a laboratory area with six sets of parallel equine-restraint stocks where students can safely perform rectal palpations and dentistry procedures.

Hackett foresees that other new facilities could round out the Equine Park of the future, including a 20-stall visiting mare barn that would accommodate client-owned mares brought to the park for breeding services or monitored foalings, a four-stall visiting stallion barn to complement the current eight-stall resident stallion barn, and a new quarantine facility at the Sally Dunn Farm, five miles from the main park complex, to provide quarantine space for new arrivals.

PURSUING EXCELLENCE . . . EVERYWHERE

Clinical Sciences Chairman Page points with pride to the Cornell specialty services that are leading the way—in research, education, and practice—among veterinary colleges in North America. A few miles east of the college's central campus, preparations are underway for a new Wildlife Health Center under the leadership of George Kollias and Noha Abou-Madi. Research in the wildlife health program focuses on diseases of free-ranging and captive wildlife and the impact diseases might have on wildlife conservation efforts. Veterinary students, externs from around the world, graduate students, and post-graduate veterinarians participate in a diverse and comprehensive curriculum in wildlife, zoo animal, and exotic animal medicine.

In addition to their teaching and clinical duties in the exotic and wildlife medicine service of the Cornell University Hospital for Animals, Abou-Madi and Kollias also travel to Syracuse's Burnet Park, where the wildlife specialists and their students provide full-service health care to more than 500 animals in the Rosamond-Gifford Zoo.

Cornell's emergency and critical care medicine service, led by Nishi Dhupa, built an important collaboration in response to Hurricane Katrina's devastation of the U.S. Gulf Coast in 2005, which overwhelmed the veterinary college at Louisiana State University where veterinarians and students were treating stranded animals. Dhupa, who also is adviser to the 60-member Cornell chapter of the Student Veterinary Emergency and Critical Care Society, deployed teams of specially trained volunteers—fourth-year veterinary students and Cornell veterinarians Michele Steffey, Ursula Krotscheck, Tracy Gieger, and David Brewer—with stocks of medical supplies such as intravenous fluids, antibiotics, suture materials, and bandages.

The work of other clinical programs personnel—among them, about 60 faculty members, 42 veterinary residents and interns, and nearly 70 licensed veterinary technicians—is vital to the animal patients they serve. Post-doctoral and research associates as well as visiting fellows within the Department of Clinical Sciences further link research to practice for the benefit of all concerned.

Noha Abou-Madi examines a young Humboldt penguin during routine rounds at the Rosamond-Gifford Zoo in Syracuse.

The animal behavior clinic, for example, tackles commonly encountered problems of aggression in all species, separation anxiety and storm phobias in dogs, house soiling in cats, and foal rejection in horses. The clinic has an active research program to investigate better medicinal and behavioral therapies.

The small-animal medicine service draws patients from throughout the state and the entire East Coast with its specialties in hematology, endocrinology, gastroenterology, hepatology, infectious and immune-mediated diseases, and nephrology-urology.

Large-animal surgeons treat approximately 2,500 horses and 1,000 farms animals each year, thanks to their expertise in orthopedic and soft-tissue surgical procedures, emergency and critical care, and exercise physiology. Novel surgical procedures are constantly being developed and evaluated, and studies are now underway in the search for new procedures for disinfection of surgical wounds.

The imaging service in the Cornell University Hospital for Animals conducts about 9,000 examinations a year—radiographs, CT scans, ultrasound images, and scintigrams—on all sizes and species of animals, while its MRI system can accommodate animals up to 200 pounds in weight.

The oncology service sees about 1,000 patients for chemotherapy or radiation treatments. Oncology's radiation facilities include a state-of-the-art linear accelerator with multileaf collimator and a CT-based three-dimensional radiation treatment planning facility. The establishment of the Sprecher Institute for Comparative Cancer Research—for which Rodney Page and radiation oncologist Margaret McEntee serve as co-directors—marks the college's commitment to link basic science with clinical investigations in order to develop useful models of cancer in many species. The institute's Cancer and Environment program investigates risk factors and develops education programming for the general public.

Janet Scarlett and feline friends at the Tompkins County SPCA facility in Ithaca.

A HOME FOR SHELTER MEDICINE

Expressions of enthusiasm—from veterinary students, residents, faculty members and shelter-management professionals—are unanimous in support of the college having adopted veterinary science's newest discipline, shelter medicine. The Maddie's Shelter Medicine Residency Program, directed by Janet Scarlett, provides instruction and hands-on shelter experience for veterinary residents and students while sustaining its primary mission to provide for the well-being of the animals.

DVM students and Maddie's program residents are trained in the design, implementation, and monitoring of preventive-medicine programs and treatment protocols for animals in shelters.

"Our ultimate goal is to minimize disease and suffering while animals are in the shelter and immediately following adoption," says Scarlett. Steps toward that goal include the establishment of protocols for vaccination, internal and external parasite control, cleaning and disinfection, disease testing, animal handling, personnel and animal traffic flow, shelter design, and zoonoses management, in addition to treatment protocols for common diseases in shelters, surgical and anesthetic protocols and perioperative management of in-shelter ovariohysterectomies and castrations, and disease surveillance programs.

Participants in the shelter-medicine residency program are expected to complete a clinical research project with an adoption-guaranteed shelter, such as the Tompkins County SPCA shelter, and publish their findings in the scientific literature. Then the residents can add a certification of proficiency in shelter medicine and an MS in epidemiology to their credentials. And perhaps bring a healthy adopted pet to graduation ceremonies.

STUDENTS OF EXCELLENCE AND DIVERSITY

The veterinary medicine curriculum at Cornell draws the most promising students from across the country. Many find their way to Cornell through the encouragement and mentorship offered by college alumni.

There is a growing diversity among the veterinary student body at Cornell. It can be seen in both the statistical makeup of the student population and in the breadth of fields in which students choose to focus.

Cornell veterinary students stand out for their concentration on specific fields of interest for which there is a call from within the ranks of veterinary medicine. Trends at Cornell in last five years show a large increase in the number of veterinary students interested in food-animal medicine, from only two or three students per class in 2001 to an average of 8–12 students per class today. These numbers run counter to the national statistics, which indicate relatively low levels of interest in the field (companion-animal medicine pulls the highest numbers). "We have strong initiatives to attract and encourage food-supply veterinarians," says Daryl Nydam, senior extension associate in the Department of Population Medicine and Diagnostic Sciences. He cites recruitment efforts, experiential education, numerous classes in food-supply medicine, clinical pathways, and Cornell's capstone Summer Dairy Institute. "Our students recognize the impact of herd health on public health. They understand that compromised food safety could have serious consequences for animals and humans."

Cornell, a major research university, enrolls an increasing number of veterinary students with interests in research or academic medicine. The increase can be credited to several innovative Cornell programs, says Robert Gilmour, the college's associate dean for research. He cites the Cornell Leadership Program, which draws an international veterinary student body and pairs students with researcher mentors; the Dual DVM/PhD Degree Program, which provides financial support and curriculum counseling for the seven-year program; pre- and post-admission information sessions that describe research opportunities at Cornell; a new summer program solely for Cornell veterinary students, the Veterinary Investigator Program; and a new NIH training grant that supports students who choose to take a year off from the DVM curriculum to pursue biomedical research experience. In addition, faculty are evaluating the potential of linking several residency programs with PhD programs. "Through these programs the college has established itself as an institution genuinely interested in promoting research opportunities for veterinary students," says Gilmour.

Today the college enrolls more students from underrepresented minority groups—16.5 percent—than any U.S. veterinary college other than Tuskeegee University School of Veterinary Medicine, says Jai Sweet, director of student services and multicultural affairs. (According to the American Association of Veterinary Medical Colleges, current enrollment of underrepresented minorities hovers just below 10 percent of total student enrollment in U.S. veterinary schools.) The term "underrepresented minority groups" is defined as including African American, Hispanic, and Native American students, Sweet explains. What explains the strong increasing trend in minority student matriculation at the college over the past 10 years? Sweet credits college investment in an institution conducive to attracting and keeping the interest of minority students—admissions presentations to attract students into the biomedical sciences, personal contacts with promising candidates encouraging applications, U.S. Department of Agriculture Multicultural Scholars grants, opportunities for interaction with current students during the admissions process, and the Expanding Horizons Initiative—multidisciplinary coursework and field experience focusing on international veterinary medicine.

Veterinary students at Cornell individualize the DVM curriculum by taking advantage of numerous opportunities for experiential learning. Each year the Expanding Horizons international summer program provides grants to five to seven Cornell veterinary students who have completed proposals outlining programs of veterinary field experience in developing nations or related work with international agencies. Students spend 6–10 weeks engaged in either veterinary research or hands-on veterinary experience—such as wildlife rehabilitation, work with local farmers to develop artificial insemination techniques for dairy herds, parasitology research—in countries such as Argentina, Brazil, Ghana, Honduras, Kenya, Madagascar, Mexico, South Africa, Thailand, Uganda, Vietnam, and Zambia. "The experience broadens each individual's perspective and helps students become more focused in their studies and pursuit of a specialty," says Alfonso Torres, the college's associate dean for public policy. The college encourages other off-site clinical, field, and research experiences—noncredit externships with private and corporate practice, humane societies, governmental agencies, and pharmaceutical/pet food companies; and opportunity blocks that include for-credit off-campus clinical experience in institutional settings with established teaching programs or in facilities offering unique clinical or research experiences. A full 90 percent of students in the DVM Class of 2006 completed at least one opportunity block; many completed several.

JACOB SILVER
DVM Class of 2007

Hometown: Kingsport, Tennessee

Specialty interest: Bovine medicine, dairy practice in particular. "I like cattle and working with farmers, doing something useful and interesting. There are population medicine and production/reproduction parameters to consider, and since the individual animals are worth a fair bit, treatments and surgery are also a big part of the work."

Learning activities of note: Participated in a summer externship following the first year of the DVM program. "It was an excellent opportunity to work with some very good dairy practices and dairy farms, as well as learn more about the industry after the milk leaves the farm." Had the opportunity as part of a research project to practice in statistical analysis and experimental design by gathering and analyzing data on what effects different prep routines had on milk letdown. Also completed several externships at various practices in New York and Pennsylvania and participated in the Summer Dairy Institute at Cornell this past summer.

Post-graduation plans: Working for a dairy practice in northern New York.

Dreams and aspirations: Owning my own farm, starting with beef cattle and maybe switching to dairy cattle.

JORDYN BOESCH
DVM Class of 2006

Hometown: Chicopee, Massachusetts

Specialty interest: Free-ranging wildlife and conservation medicine. "The thought of losing so many beautiful species to extinction is upsetting to me. I feel that veterinarians can play an important role in helping to make long-term, far-reaching change in the world and preventing such a catastrophe."

Learning activities of note: Two summers in Africa through Cornell's Expanding Horizons—first summer at a baboon rehabilitation center outside Kruger National Park in South Africa, performing fecal flotations on four troops of baboons and acting as foster parent/vet technician/rehabilitator for orphaned infant baboons; second summer at Cheetah Conservation Fund in Namibia with a reproductive physiologist from the Conservation and Research Center of the Smithsonian's National Zoological Park, collecting semen samples from wild and captive male cheetahs and assisting researchers with gastric biopsies of wild and captive cheetahs, cheetah and brown hyena biomedical work-ups, and captive cheetah diagnostics and medical treatments. "These were the best experiences of my life. The work made me feel that I was making a difference and that veterinary medicine was truly my calling."

Post-graduation plans: Small-animal internship at Metropolitan Veterinary Hospital in Akron, Ohio; considering graduate school for research in reproduction of endangered species.

Dreams and aspirations: Working for an organization such as the Wildlife Conservation Society's Field Veterinary Program.

JAIME-LIN VENEZIA
DVM Class of 2009

Hometown(s): New York City

Specialty interest: Laboratory-animal medicine and clinical research. "A compassion for animals, a predilection for the sciences, and a deep interest in discovery paved my path for pursuing this field. Laboratory-animal vets are at the forefront of sound research, insuring accurate and humane protocols and reliable data."

Learning activities of note: Participated in a research project focused on studying the genetic basis of cardiac abnormalties in a colony of German shepherd dogs, learning molecular techniques for analysis of specific genes. Participated this past summer in the Veterinary Scholars Program at North Carolina State University College of Veterinary Medicine on a project that involves the molecular cytogenetic analysis of soft-tissue sarcomas in flat-coated retrievers. "The project goal is to identify a common region of the canine genome that appears to be abnormal in cases of soft-tissue sarcomas, which may lead to the identification of cancer-associated genes."

Post-graduation plans: A residency in lab-animal medicine, preferably with a research focus.

Dreams and aspirations: A career in industry as a laboratory-animal veterinarian, collaborating on research that involves drug discovery in the field of cancer therapeutics.

KATIE MURPHY
DVM CLASS OF 2008

Hometown:
southern New Jersey

Specialty interest: Public-health veterinary medicine. In particular, epidemiology, infectious diseases, food safety, risk analysis, and emergency preparedness and response.

Learning activities of note: Participated in a veterinary student trainee program sponsored by the Food Safety and Inspection Service of the U.S. Department of Agriculture, "where I realized that I wanted to pursue public health." Winter break 2006, traveled to the U.S. Center for Disease Control (CDC)'s Day for Veterinary Students, which highlighted career choices in the federal government. One of two students attending the Infectious Diseases Meeting with U.S. Senator Hillary Clinton when she visited Cornell in March. Participated this past summer in the Smith-Kilbourne Program at Cornell and the Plum Island Animal Disease Center, learning about various foreign animal diseases that potentially threaten the domestic animal population. Also participated in the International Foreign Animal Disease Diagnostician training course at Plum Island, analyzing the association of herd- and animal-level risk factors with the occurrence of antimicrobial resistance in *Salmonella* isolates from dairy cattle.

Post-graduation plans: Work for a government agency in the Northeast. Pursue an MPH (master of public health) or PhD.

Dreams and aspirations: Apply to the CDC's Epidemic Intelligence Service, a two-year program for on-the-job training in disease outbreak and investigation.

JULIO LOPEZ
DVM CLASS OF 2008

Hometown:
Los Angeles, California

Specialty interest: Small-animal medicine. He values the opportunities that working at a small-animal practice provides—the chance to become part of the special bond between clients and their pets. "I have enjoyed getting to know the clients at the practices for which I have worked. When we help a child's pet get better and see the look on the child's face and their excitement when they come to pick up their 'best friend' from the hospital—that's absolutely the best."

Learning activities of note: Medicine and surgery has been my favorite class so far—the real deal. Besides this, I would have to say physiology—I have always found it interesting to learn how the different body systems function and interact.

As co-president of the student group Veterinary Students as One in Culture and Ethnicity (VOICE) I have had the opportunity to help organize events that celebrate the cultural diversity of our student body. In celebration of Latin Heritage Month, we held a Latin taste fair for which VOICE members cooked authentic Latin dishes for the veterinary community to enjoy.

Post-graduation plans: Return to Los Angeles to complete an internship in small-animal medicine and surgery with mentor Stephen Ettinger, Cornell DVM '64, at the California Animal Hospital. Then a residency in small-animal internal medicine.

Dreams and aspirations: Eventually own a veterinary hospital (or part of one). Also help with efforts aimed at preserving endangered species.

ERIN MCDONALD
DVM CLASS OF 2008

Hometown:
New Hartford, New York

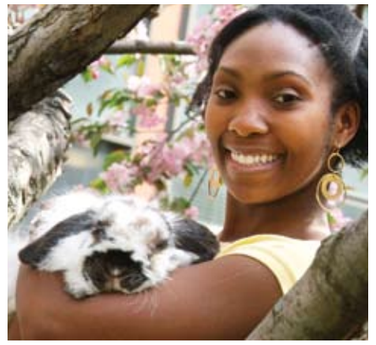
Specialty interest: The roles of veterinarians in developing nations and what we can do to promote sustainable livelihoods for people, their animals, and the natural world on which they depend.

Learning activities of note: Participated last summer in Cornell's Expanding Horizons program, assisting with a river dolphin conservation project in Argentina—aiding the research team in their collection of behavioral, necropsy, and population survey data. "It was an amazing experience, widening my perspective on the possible services that our profession can provide." This past summer as part of Expanding Horizons, she traveled to Zambia to be a part of a large multidisciplinary research project (Cornell and the Wildlife Conservation Society) focusing on the improvement of rural livelihood and sustainable agriculture/biodiversity conservation.

Post-graduation plans: One of my passions has always been biodiversity conservation—in both the short- and long-term.

Dreams and aspirations: I'd like to continue using my veterinary education to work towards sustainability and wildlife conservation on an international level.

MARIEA ROSS
DVM CLASS OF 2006



Hometown:
Bloomfield Hills, Michigan

Specialty interest: Avian and exotic-animal medicine. Many of the same principles of medicine and surgery apply, but your physical examination is much faster. Diagnostics can be difficult to obtain, she explains, without stressing your patient, who is often a master at disguising illness. "I love working with my patients. I know I'm in the right profession because even on my worst days I still have a reason to smile."

Learning activities of note: Through a program sponsored by the college's Alumni Association, spent one summer in California working with Bruce Boehringer, Cornell DVM '64 and Erika Mendez, Cornell DVM '02. "They were great mentors, allowing me to shadow them during appointments, scrub in during surgery, and spend time with veterinary specialists."

Post-graduation plans: Associate veterinarian at the Pender Veterinary Centre in Fairfax, Virginia, working with cats, dogs, and exotics.

Dreams and aspirations: Figure out what I really want to do with life—enjoy working with exotics, but also enjoy working with dogs and cats. "No matter what I choose, I hope I'm doing something that I'll look forward to every day."

REBECCA MITCHELL
DVM CLASS OF 2009

Hometown:
Skaneateles, New York

Specialty interest: Cornell's dual DVM/PhD curriculum. Research in production-animal medicine—to address the need for safe, reliable food sources in both developed and developing nations.

Learning activities of note: Spent two years prior to entering veterinary school beginning a PhD project to study the transmission of Johne's disease on dairy farms in the United States—working with the Johne's disease research group at Cornell, in Quality Milk Production Services—a chance to learn techniques in statistics and mathematical modeling. Spent summer 2005 in the Leadership Program for Veterinary Students at Cornell. "We had the opportunity to meet all kinds of researchers and get a glimpse into all the places a research career could take a veterinary student." Also spent summer 2004 in Peru, learning how to build a model of *T. solium* transmission and working with research trials in Lima—first chance to spend time in a developing nation and first hands-on experience with parasite control efforts.

Post-graduation plans: Following the completion of my DVM degree, I will spend one more year at Cornell's College of Veterinary Medicine, focused on completing a graduate thesis.

Dreams and aspirations: To continue research in the field of mathematical modeling. There are many opportunities open in many different genres (public health, agriculture, policy, industry) for this type of research. "Serendipity seems to be the theme of all research careers, so even if I picked one now, I'm sure I'd be wrong."

Construction Update

RESEARCH FACILITY TAKES SHAPE

Work continues on the construction of the East Campus Research Facility (ECRF), located on the south side of the college's Veterinary Research Tower (VRT) on Tower Road. Three floors will be occupied; one is required for mechanical equipment. When completed in September 2007, the four-story 80,000-square-foot building will house research and teaching animals for faculty across the university and markedly expand Cornell's capacity to house laboratory mice in a clean environment. In concert with animal facilities in Cornell's Life Sciences Technology Building, currently under construction on the south side of Tower Road, the ECRF will boost the university's capacity to house and care for more than 80,000 mice for genomics-related research.

"The ECRF will allow us to ensure that the animal care and use program at Cornell University remains one of the premiere programs in North America, while providing operational efficiencies to ensure lower animal-care costs to support the exciting research of our faculty in this competitive environment," says Michele Bailey, Cornell's associate vice provost for research animal resources and a veterinarian specializing in laboratory animal medicine and science.

The ECRF is central to the university's Life Sciences initiative, says Michael Kotlikoff, professor and chair of the college's Department of Biomedical Sciences and a faculty member of the mammalian genomics focus area of Cornell's new life sciences initiative. "Mice are an essential part of modern biological research—they are the only mammalian species in which we can routinely add or eliminate a specific gene, and because genetically identical strains of mice have been produced, they allow us to determine the effect of altering one gene," he says. "Our current facilities have reached capacity, and the ECRF and new Life Sciences Technology Building will provide the necessary capacity for the many investigators working in these areas."

To learn more about Cornell's Life Sciences initiative—a university-wide collaboration to develop and launch a multiyear, $600-million campaign to enhance and support life sciences research and education—see http://lifesciences.cornell.edu.

Those passing by the ECRF site can now clearly see the construction progress. The building's concrete structure is well under way. The concrete floor for the fourth level recently was completed, and the concrete fire-stair roof decks and roof parapets were poured in May.

"The ECRF will allow us to ensure that the animal care and use program at Cornell University remains one of the premiere programs in North America."

Exterior wall construction has begun, and layout and construction of interior walls also is under way. The steel framing for the fourth level of the building began in May. Electrical and plumbing work is in progress on the first through third levels. Work continues on the mechanical space at the south end of the site.

The new facility will be connected to the VRT via a linking corridor to the first floor, which already has been constructed. As a separate project, the first floor of the VRT is being renovated to accommodate the offices of the Cornell Center for Animal Resources and Education. Design has been completed for the first-floor offices, and the plans are out for contractor bids. Work on the offices is expected to begin this year, with completion in early 2007.

"We're making every effort possible to coordinate the timing of construction tasks so that we can minimize disturbances for the people who work in the area," says John Keefe, project manager, who works in the Planning, Design, and Construction unit of Cornell's Facilities Services.

Building design for the $55 million project is by Ballinger Architects of Philadelphia.

The college's facilities office is posting quarterly updates on construction progress. Contact Wayne Davenport at wad2@cornell.edu for information.

Search Begins for New Dean

Orderly Transition of Leadership

Donald F. Smith, the university's Austin O. Hooey Dean of Veterinary Medicine, recently announced that he will pass his leadership to a successor at the end of his second term in June 2007.

Appointed by former Cornell President Hunter Rawlings in April 1997, Smith is a member of the National Academy of Practices and the first board-certified clinician to serve as dean of the college.

"Dean Smith's tireless leadership and devotion to his profession have been the forces behind the impressive achievements of Cornell's College of Veterinary Medicine," says Rawlings. "Because of Dean Smith's vision and foresight, the college has maintained its traditions and high standards while undergoing an innovative reorganization that has enhanced its academic departments and the programs offered to students. We look forward to building on his legacy as we prepare for the upcoming transition."

From the start of his deanship, Smith set the course for Cornell's advanced efforts in biomedical research by establishing three academic priorities in his first year, encouraging interdisciplinary collaboration in infectious disease; cancer biology and oncology; and mammalian genomics. Throughout his tenure, Smith strengthened Cornell's reputation as the most respected name in veterinary medicine by leading the pursuit of animal and public health through education, research, and service. Under his deanship, Cornell's College of Veterinary Medicine consistently has ranked high among its peers, earning the No. 1 ranking since 2000 according to *U.S. News and World Report.*

"The college has not only sustained its leadership in clinical research, education, and patient care but also has become a major force in the university's initiative to enhance Cornell's research in the new life sciences," says Provost Carolyn (Biddy) Martin, who has convened a search committee to recruit a new dean. "I am also delighted that the number of women faculty and the diversity of the student body at the college have increased under Dean Smith's direction."

The college's department chairs also congratulated Smith on his leadership, academic vision, and reorganization of the college's finances and fostering of transparency and accountability.

"These policies and practices stand the college in good stead and will serve as a wonderful legacy of Don's leadership," says Michael Kotlikoff, chair of the Department of Biomedical Sciences.

After he steps down from his post, Smith plans to return to the faculty, where he will explore special opportunities concerning the veterinary profession, in particular the relationship of companion animals to the family structure in America. He also will continue to advocate for the advancement of the biomedical sciences within the veterinary medical infrastructure, an area to which he has devoted considerable attention while serving as dean at Cornell.

"The college has not only sustained its leadership in clinical research, education, and patient care but also has become a major force in the university's initiative to enhance Cornell's research in the new life sciences."

"As I approach the end of my second term, in June 2007, I now look forward to passing the baton to my successor and returning to serve on the faculty," Smith says. "The College of Veterinary Medicine is vigorous and well poised to recruit our tenth dean, who will most likely lead us through Cornell's sesquicentennial in 2015. I trust you will give my successor the same support and encouragement that you have provided to me."

News Briefs

ALUMNI NEWS

Joseph Merenda, DVM '34 returned for his 72nd reunion in June. "I still love Cornell deeply," he said, promising to return for his 75th reunion in 2009.

Among the many guests returning for their 60th year reunion were John Steele, distinguished equine practitioner in Wellington, Florida, and Robert Kirk, professor emeritus. Also returning was Dr. Sylvia Berg Salk, wife of Herman Salk '46 and sister-in-law of Jonas Salk, MD. "This was my first visit back to Cornell since we left in 1946," she said, "and I thoroughly enjoyed it."

Sheila W. Allen, DVM '81 is the new dean for the College of Veterinary Medicine at the University of Georgia. She joins a distinguished list of Cornell alumni who have served as dean of a college of veterinary medicine in the past 100 years.

Douglas G. Aspros, DVM '75 has been elected to the executive board of the American Veterinary Medical Association through 2010, representing New York and the New England states. He also has served as president of the New York State Veterinary Medical Society, chair of the AVMA's Council on Education, and a member of the College's Advisory Board and the Cornell University Council. In 1996, Aspros and his wife, Dee, established the Hobbes Scholarship to support veterinary students at Cornell.

Scholarships Recognize Distinguished Alumni

The John Whitefield Scholarship was established by colleagues of **John Whitefield, DVM '65**, a pioneer in the application of surgical expertise and clinical practice, who passed away on August 20, 2004.

The Marilyn Schmidt Scholarship is being established by the family and friends of **Marilyn Schmidt, DVM '78** who died suddenly on September 27, 2005. An accomplished equine veterinarian and horsewoman, Schmidt was a loving parent and wife and an engaged member of the community.

The David Morrow Scholarship honors **David Morrow, DVM '60, PhD '67**, a longtime friend and supporter of the College of Veterinary Medicine who passed away after a long illness on December 22, 2005. Morrow served as president of the executive board of the college Alumni Association from 2000–2001.

COLLEGE NEWS

The College of Veterinary Medicine welcomes Cornell's twelfth president, David J. Skorton, MD, and his wife and new veterinary faculty member **Robin Davisson, PhD**, who arrived in Ithaca accompanied by their two beloved Newfoundland dogs, Miles and Billie.

Davisson, an accomplished biomedical researcher and teacher, has been appointed professor of cell biology in the Department of Biomedical Sciences. Her research focuses on the basic mechanisms of function, control, and signaling in the cardiovascular system in health and disease. She is a leading scholar in the field of cardiovascular genomics and will be a natural complement to the other scientists and clinicians in the college. "She is a terrific scholar and mentor," notes Michael Kotlikoff, department chair. "We are honored to have her select the veterinary college as her new academic home." Davisson will have a joint appointment in cell and developmental biology at the Weill-Cornell Medical College in New York City.

Ezra Cornell turns 200. Celebrations will continue throughout the 2006–2007 academic year in honor of the 200th anniversary of the birth of the university's founder. Ezra Cornell, born in DeRuyter, New York, on January 11, 1807, was a builder, entrepreneur, and farmer. Cornell insisted that veterinary medicine be among the subjects taught in his new university.

The college will honor this milestone in its heritage throughout the year, including at alumni receptions at the AVMA meeting, the North American Veterinary Conference, and the Western States Veterinary Conference.

Rodney L. Page was recently appointed the Alexander deLahunta Chair of Clinical Sciences. The endowed chairmanship results from a $2.5 million gift by an anonymous donor, a long-time friend of veterinary medicine and a senior member of Cornell's board of trustees. "Not only is this a magnificent gift in terms of its monetary value," said Dean Donald Smith in making the announcement, "but more importantly it honors perhaps the best teacher of veterinary medicine since James Law, Cornell's founding veterinary professor and dean. To name a gift in honor of another person, is the quintessence of philanthropy."

Rodney Page

After 43 years of preeminent leadership in teaching and scholarship, Alexander deLahunta retired from the college faculty at the end of the 2005 academic year. He and his wife, Pat, reside in Rye, New Hampshire, close to the ocean and their beloved grandchildren.

A fund honoring Dr. deLahunta was established last year, with the proceeds being used for neurology and support of the long-term teaching efforts of the college.

One of the first donors to the fund is Edward von der Schmidt, DVM '78, who is also a practicing human neurosurgeon in Princeton, New Jersey. "Like multitudes of Cornell graduates since 1963, I felt Dr. deLahunta's profound impact in my life and career, and I am delighted to return to Cornell in recognition of the outstanding faculty who taught me," he said.

Alfonso Torres has been named associate dean for public policy. His portfolio of duties has been expanded to include state and federal government relations and public policy; oversight of the Animal Health Diagnostic Center; leadership and development of international veterinary programs as well as wildlife and biosafety programs; and participation in the professional veterinary curriculum through courses related to foreign and emerging diseases of animals.

Robert O. Gilbert has been appointed senior associate dean. In this capacity his expanded duties include oversight responsibility for academic appointments, promotions, and tenure; for capital projects, facilities, and assignment of space; for the Cornell University Hospital for Animals; and for the college's relationship with the State University of New York. Gilbert also serves as deputy dean in the dean's absence.

Senator Hillary Rodham Clinton visited the College of Veterinary Medicine in March, spending almost three hours with faculty and students. The purpose of her visit was to learn about Cornell's public health efforts in avian flu, bovine spongiform encephalitis, and other zoonotic diseases. She also met with faculty and staff leaders in the Breast Cancer and Environmental Risk Factor program, a multidimensional research and outreach effort jointly sponsored by the federal and state governments.

"I have a very high regard for the work you do here," Clinton said, commenting on her first visit to the college. "Veterinary colleges are moving into the lead in cancer research. Cornell is one of our world leaders."

Michael Wildenstein, Cornell's resident farrier, has been inducted in to the International Horseshoeing Hall of Fame. Wildenstein is the only American farrier that is certified as a fellow with honors of distinction of the Worshipful Company of Farriers, achieving a score that ranked among the four best scores ever recorded in the 650 year history of the guild.

The college's fourth annual White Coat Ceremony, sponsored by the college's Alumni Association, was held in December for the Class of 2007. The featured speaker for the evening was Ann C. Harris, DVM '83. During the ceremony, a tradition at veterinary medical colleges across the country, students receive a white coat, a symbol of professionalism and empathy in the practice of medicine. The rite of passage reminds veterinary medical students of the need to balance excellence in science with humanistic patient care. Cornell's ceremony honors the individuals who have provided considerable support and special encouragement to our students—they are invited to participate in the ceremony by enrobing their students with the time-honored mantle of the medical profession: the white coat.

John Parker, BVMS, PhD, assistant professor of virology in the Department of Microbiology and Immunology, is the recipient of the Burroughs Wellcome Investigators in Pathogenesis of Infectious Disease Award. This is the first time in which either a veterinarian or a Cornell faculty member has been given this honor. (The award provides $80,000 per year for five years.) Parker is a faculty member at the Baker Institute for Animal Health. He studies feline calciviruses and mammalian orthoeviruses.

Kevin Mahaney '85 (CALS) joined the college in March as assistant dean for alumni affairs and development, with responsibility for fundraising and alumni programs on behalf of the college. Prior to assuming this position, Mahaney was vice president for development and alumni relations at the State University of New York at Oswego and president/executive director of the Oswego College Foundation, Inc. In addition to formulating and implementing fundraising and campaign strategies, he was responsible for alumni and parent relations, university development, publications, and WRVO, Oswego's public radio station. Before joining SUNY Oswego, Mahaney was assistant dean for public affairs in Cornell's College of Agriculture and Life Sciences, where he led a team responsible for development, alumni affairs, and public relations initiatives. Mahaney lives in Ithaca with his wife, Sheri, and their two sons.

Gifts to the College

MADDIE'S® SHELTER MEDICINE PROGRAM

The college is grateful to Maddie's Fund for funding the new Maddie's Shelter Medicine Program, which provides instruction and shelter experience for Cornell veterinarians and veterinary students. The fund was founded by David Duffield, BEE '63, MBA '64 and his wife, Cheryl, in memory of their beloved miniature Schnauzer, Maddie. Laurie Peek, DVM '96, serves as the veterinary programs director for the fund.

The program's four components—Maddie's Shelter Medicine Residency, veterinary student training, Maddie's Shelter Medicine Outreach, and Maddie's Shelter Medicine Research—enable students to create and evaluate preventive medicine and treatment protocols and implement and monitor disease surveillance systems in animal shelters. The Maddie's Shelter Medicine Residency, three years in length, leads to Cornell certification of proficiency in shelter medicine and a master's of science degree in epidemiology. *(See related story on page 13.)* The program will supplement the shelter medicine curriculum by supporting shelter medicine rounds; a brown-bag luncheon series on companion animal welfare issues; a student club, Veterinary Students for the Prevention of Cruelty to Animals; externships with adoption-guarantee shelters, the ASPCA in New York City, and Lollypop Farms in Rochester; field trips to adoption-guarantee shelters, and special lectures. The program will support outreach through services to participating shelters, including diagnostic and medical support for evaluation of population-level disease issues. The Maddie's Program will support research in medical and behavioral problems and protocols relative to adoption-guarantee shelters.

POWELLS ENDOW A PROFESSORSHIP IN SMALL-ANIMAL MEDICINE

Donald (DVM '69) and Rita Littleton Powell have established a $2 million advised bequest to endow a professorship for small-animal medicine in the College of Veterinary Medicine. Dr. Powell and his partner Dr. Mark Johnson operate one of the most successful animal practices in the Mid-Atlantic region, the Pender Veterinary Clinic in Fairfax, Virginia. The full-service animal hospital, opened in 1971, now boasts 25 doctors—including several Cornellians—providing service in internal medicine, cardiology, ophthalmology, dermatology and allergy treatment, geriatric medicine, reproductive medicine, orthopedics, surgery (including laser surgery), ultrasonography, and endoscopy.

Powell also founded the nonprofit Pender Pet Caring Foundation, which promotes and provides funding for animal care. The foundation funds Cornell's Comparative Cancer Program and Cornell's Feline Health Center, sponsors continuing education, supports adoption programs such as Guiding Eyes for the Blind, and subsidizes the treatment of sick or injured stray animals.

Powell served on the college's Advisory Council from 2000–2003 and continues his strong commitment to the college. He has attended the Career Forum for the past three years to recruit graduates for internships at his practice, and often returns to campus to speak to veterinary students. Powell also is a member of a 20-practice management group that sets standards for veterinary practices.

ENDOWED PROFESSORSHIP HONORS UDALL LEGACY

In announcing geneticist Teresa Gunn as the first faculty member to be appointed as the Robert Hovey Udall Assistant Professor, Dean Donald Smith said, "Dr. Gunn's teaching and research interests match very closely to what a twenty-first century Robert Udall may have done—and that greatly pleases his family and friends. We are deeply grateful to Robert and his wife, Mary, for their inspiring support of our young faculty."

The Robert Hovey Udall Assistant Professorship was endowed through the gifts of Robert Udall AB '38, DVM '41, PhD '51, who died in 2001. He gave to Cornell to honor his father Denny Hammond Udall, a 1901 graduate of the College of Veterinary Medicine, a Cornell faculty member, and

Teresa Gunn, PhD (left), with Mary Udall. Gunn is a leading authority on genes with overlapping functions and their links to congenital problems such as heart arrhythmia in German shepherds and spongiform degeneration in the brains of mutant mice.

large-animal clinician from 1908–1942. Through this assistant professorship the legacy of these two giants in veterinary medicine will live in perpetuity.

Few people associated with veterinary medicine in the first half of the twentieth century are held in higher esteem than Dr. Denny Hammond Udall, longtime editor and publisher of *The Cornell Veterinarian,* director of the Ambulatory Clinic, and head of Cornell's Department of Veterinary Medicine from 1908–1942. Udall proved formidable as a veterinary specialist with his pioneering work on the clinical control of mastitis and his championing of tuberculosis and brucellosis eradication programs. He authored more than 60 scientific papers and books, including the seminal textbook *The Practice of Veterinary Medicine.* He retired in 1942 but served as professor emeritus until his death in 1955.

Robert Udall spent his professional career at Colorado State University in Fort Collins, where he was a professor in the Department of Pathology at the College of Veterinary Medicine. His expertise was in the biochemistry of animal diseases, particularly metabolic diseases of sheep. Udall's academic pursuits took him to Europe and then Africa, where he worked on a project for the U.S. Agency for International Development. He retired from Colorado State in 1978.

In 1997 Robert Udall was honored as a foremost benefactor of Cornell after establishing a substantial unrestricted endowment for the College of Veterinary Medicine in honor of his father. He added to that gift in 1999 through a charitable gift annuity.

ZWEIG FUND ENDOWS ASSISTANT PROFESSORSHIP IN EQUINE HEALTH

Maria Julia Bevilaqua Felippe Flaminio, DVM, MS, PhD, DACVIM, assistant professor of large animal medicine, recently was named the Harry M. Zweig Assistant Professor in Equine Health. She is the first recipient of this endowed position funded by the Harry M. Zweig Memorial Fund for Equine Research and the college. The three-year honor is given to a junior faculty member who shows promise and productivity in the field of equine research.

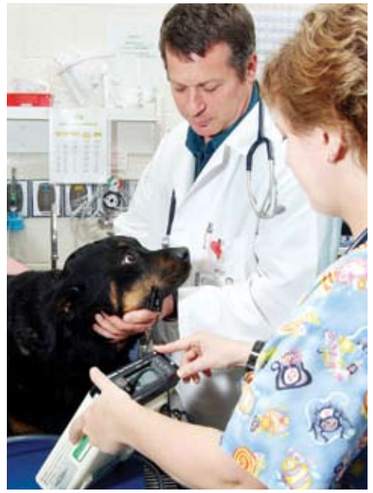
Maria Flaminio, DVM, PhD is the first faculty member to be appointed as the Harry M. Zweig Assistant Professor in Equine Health.

Flaminio has expertise in research of the equine immune system, with specific attention to the foal. She currently is investigating how the immune system of a foal responds to a Rhodococcus equi infection. She joined the college's Department of Clinical Sciences faculty in 2001. She earned a DVM in 1989 from the Universidade Estadual Paulista-UNESP-Botucatu, Brazil, completed an internship in equine surgery and medicine in 1995, a master's degree in 1997, and a residency in equine internal medicine in 1998 at Kansas State University. In 1999 she achieved board certification from the American College of Veterinary Internal Medicine; she received her PhD in immunology from Cornell in 2002.

INTENSIVE CARE UNIT NAMED FOR AUTHOR PATRICIA CORNWELL

The college dedicated the Patricia Cornwell ICU for Companion Animals in June, in celebration of a gift of $1 million from Patricia Cornwell, *New York Times* bestselling author and former crime reporter.

Cornwell's gift to Cornell was inspired by her affinity for animals in need as well as her commitment and advocacy for causes such as forensic research, victims' support, and animal rescue. Her gift was pledged after she brought her beloved English bulldog Booboo to the Cornell University Hospital for Animals,



Internal medicine specialist Richard Goldstein and Susan Brown, LVT, check on a canine patient in the ICU.

where he received excellent care and compassion from veterinary internist Richard Goldstein and the hospital's clinicians. Cornwell returned with another English bulldog, Okey, and was again impressed with the level of excellence at the hospital. When Okey was rescued he had one eye blinded and was totally deaf due to neglect, but his treatment at Cornell helped improve the quality of his life.

"Cornell is the place to go, without a doubt, if there's something wrong with one of your animals," says Cornwell.

Thanks to Cornwell's generous gift, a wireless server was installed to beam magnetic resonance images, computed tomographyscans, ultrasounds, and radiographic images throughout the hospital. This critical technology upgrade allows medical teams to quickly view and share images, which in turn speeds up diagnosis and treatment of patients. More than 17,000 companion animals are treated at the Cornell University Hospital for Animals every year, and in an emergency or when the patient is in critical condition, every second counts.

LIFE SCIENCE PROFESSORSHIP AWARDED TO VETERINARY FACULTY MEMBER

Holger Sondermann, a faculty member in the college's Department of Molecular Medicine, has been named as the Robert N. Noyce Professor of Life Science and Technology, a three-year appointment made to a young Cornell faculty member in genomics, engineering, or technology. The professorship, endowed in 2001 by Cornell Trustee Ann S. Bowers '59 on behalf of the Noyce Foundation named in honor of her late husband Robert N. Noyce, supports the university's initiative in the life sciences.

Sondermann is interested in deciphering the regulatory principles in signal transduction networks, focusing on growth-factor receptor signaling and scaffolding proteins. Understanding the details of these processes will elucidate how cells respond to various inputs and control the activation of signaling switches for normal growth.

Legendary insurance mogul Maurice R. Greenberg and his wife, Corinne (pictured above with Snowball), were honored at the college on April 11 at the dedication of the magnetic resonance imaging (MRI) suite bearing their name. Funded by a generous donation from the Maurice and Corinne Greenberg Foundation, the suite has been operational at the Cornell University Hospital for Animals since fall 2004. Snowball, the Greenberg's 12-year-old Maltese and a cancer survivor, was the guest of honor during the inaugural ceremony. Jonathan May, Cornell DVM '80, who is the Greenberg's personal veterinarian, was responsible for Snowball's initial diagnosis and surgical treatment almost four years ago. Margaret McEntee, medical and radiation oncologist and chief of oncology at the Cornell University Hospital for Animals, led Cornell's clinical team in their care of Snowball following his referral by his veterinarian to Cornell.

Announcing a New $80 Million Animal Health Diagnostic Center for Cornell

BY DONALD F. SMITH, AUSTIN O. HOOEY DEAN OF VETERINARY MEDICINE

"You have the brain power, you have the education, you have the commitment, and now . . . the resources."

We were delighted to host Governor Pataki at the college on August 14. He brought good news—the state of New York is providing $50 million in capital funding (to be supplemented by $30 million from Cornell and other sources) for a new building to consolidate the Animal Health Diagnostic Center (AHDC) service activities. The new 126,000-square-foot facility, to be completed in 2010, will increase our capabilities to ensure the early detection and identification of pathogens that can significantly affect the health of animals and humans. A major component of the new AHDC building will be the addition of laboratories with enhanced biosecurity (BSL-3) to enable the safe and reliable handling of pathogenic microorganisms.

Pataki commended our faculty and staff, saying, "You have the brain power, you have the education, you have the commitment, and now what you need are the resources." The governor acknowledged that a majority of infectious diseases are threats to both animals and humans—avian influenza, West Nile virus, and bovine spongiform encephalopathy ("mad cow" disease), examples from recent news stories about which many in the public are aware.

The AHDC is involved in many other diagnostic services as well. As the only full-service multidisciplinary animal disease diagnostic facility in the state, the AHDC conducts one million tests per year for infectious, parasitic, endocrine, or toxicological diseases—on more than 300,000 individual samples from across the United States and Canada. The AHDC operates in close partnership with the state's Department of Agriculture and Markets and other departments involved in disease surveillance and prevention in animals and humans. Since the 2002 appointment of Alfonso Torres, former U.S. chief veterinary officer, to lead the AHDC, Cornell has expanded its role in the surveillance of diseases at the national level. As one of 12 pilot laboratories in the National Animal Health Laboratory Network, funded by the U.S. Department of Agriculture, the AHDC offers surveillance and expanded diagnostic capabilities for a number of animal diseases not present in the United States, like highly pathogenic avian influenza.

Today, samples from more than 90 live-bird markets in New York City are routinely being tested for the H5 and H7 strains of avian flu. Two years ago, AHDC researchers isolated the canine flu virus that was killing dogs in 13 states including New York. In 2005 the AHDC identified chronic wasting disease in New York's whitetail deer population.

In conjunction with the college's Department of Population Medicine and Diagnostic Sciences, the AHDC also provides research, teaching, and outreach—diagnostic methodologies, epidemiology, disease pathogenesis, preventive health programs, and disease management.

Members of the AHDC are involved in the development of animal health public policy through service on task forces, committees, panels, and advisory groups to producer organizations and state and federal agencies. They also are active in the international arena, dealing with animal-disease controls and trade in animals and animal products.

The AHDC is part of Cornell's long veterinary public health tradition. Veterinary medicine has been taught and practiced since Cornell University opened its doors in 1868, and diagnostic services were offered soon after the college was chartered in 1894. The first building designated as a diagnostic laboratory opened at Cornell in 1977. Today the AHDC operates laboratories in 12 different buildings within the greater Ithaca area. Nearly 30 years later, all agree that it is time for a new facility to house all of its diagnostic services. As Cornell's President David Skorton recently said, "This new facility's research and diagnostic programs will have a profound influence on New York's economy and on animal and human health in the state, the nation, and throughout the world."

The link between human and animal health is critical. Many emerging infectious diseases discovered during the last few years threaten the health of both animals and humans, making expanded monitoring and diagnostic testing essential. I trust that you will join us in looking forward to the promise and potential of our new AHDC building program.

A Siberian tiger holds court at the Bronx Zoo.

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Major Photography
At the Wildlife Conservation Society's Bronx Zoo by Jesse Winter, photographer, and Nick Walker, assistant.

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Events

November 4–5
Solving Canine Behavior Problems, Ithaca NY

November 9–10
Equine Practitioners Conference, Ithaca NY

November 11–12
23rd Cornell Farrier Conference, Ithaca NY

December 2
White Coat Ceremony, Ithaca NY

December 4
American Association of Equine Practitioners Conference Alumni Reception, San Antonio TX

January 13, 2007
North American Vterianry Conference. Orlando, FL

February 19
Western States Veterinary Conference, Las Vegas, NV

A mare and her foal cantering in a pasture at Cornell's Equine Park.

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