Fall/Winter 2014

TRACKS

Magazine of The Virginia-Maryland College of Veterinary Medicine

The forefront of clinical research

Regenerative medicine

College diversity on the rise

Virginia-Maryland College of Veterinary Medicine

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The forefront of clinical research
Cathy Nunn, holding her whippet, Willow, traveled from North Carolina to participate in a clinical study at the veterinary college. **Photo by**: Georgi Wilson-Barker

We're sorry to report that Willow, age 14, passed away due to a fall on November 3, 2014 after a very full life. She was a wonderful pet, a loyal friend, and everything Cathy Nunn could have hoped for in a whippet.

TRACKS Fall/Winter 2014

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Dean Clarke and his golden retriever, Dudley

Message from the Dean

I'm excited to share with you this inaugural edition of *TRACKS* magazine, part of our continuing efforts to engage and inform friends of the college. These stories will tell you more about our core missions of teaching, research, and service. They also highlight some of the accomplished people who contribute to our success. You'll read about students, faculty, staff, alumni, and hospital clients—a wide community of supporters whom we rely on to achieve our goals.

We would not be able to develop new approaches to treating cancer, advance research in regenerative medicine, or educate veterinary students without the animals that are brought to our hospitals for treatment or the generous gifts from donors. Also, we would not be able to prepare students for careers that meet the needs and aspirations of all members of our community without the shared commitment to advance inclusiveness and diversity.

A common thread running through these stories is the importance placed on service, to our profession and university, and to the communities we serve by securing animal health and promoting public health in collaboration with our human health colleagues.

Cynthia Clarke

College facilities get a makeover

Improvements and upgrades have changed the look and feel of the Virginia-Maryland College of Veterinary Medicine for the better. College renovations to the library created an open, attractive space for students and, since it opened this fall, it has been buzzing with activity.

In response to changing student and faculty demands, the college expanded digital library resources and reduced book hard copies. The new space integrates with the commons and cafeteria — both of which underwent renovations last year — to create a multi-use area for eating, study, and community interaction.

Also this summer, construction crews remodeled faculty offices, repaired the roof, and upgraded the Veterinary Teaching Hospital's examination rooms and lobby. Hospital clients have already expressed their appreciation for the improvements.

Vision for the Future

OUR TOP 5 Development GOALS are:

- Translational Medicine Building **$6.2 million**
- Endowed Faculty Chairs **$4 million**
- Equine Medical Center **$2 million**
- DVM Student Support **$1 million**
- Experiential Learning **$500, 000**

The forefront of clinical research

Veterinary Clinical Research Office facilitates companion animal clinical trials

> Clinical research at the veterinary college involves both primary research focused on advancing the treatment and diagnosis of veterinary diseases and translational research in which spontaneous diseases in animals can be used as models of human disease.

When Michael and Sandra Friedlander first came to the Virginia-Maryland College of Veterinary Medicine three years ago with their dog, Grayton, they learned some bad news: Grayton had nasal adenocarcinoma, a form of cancer with a short life expectancy.

"Most dogs with this form of cancer are with their owners no more than a few months after the diagnosis, but here Grayton is three years later," said Michael Friedlander, who is the executive director of the Virginia Tech Carilion Research Institute and senior dean at the Virginia Tech Carilion School of Medicine.

Clinicians at the Veterinary Teaching Hospital referred Friedlander, who is no stranger to medical research in his role as associate provost for health sciences at Virginia Tech, to an experimental treatment at the University of Florida called stereotactic radiation therapy. This treatment, which can only be performed once, delivers precise, high dosages of radiation to a tumor. "That shrunk the tumor down to almost nothing," Friedlander said. "We knew when Grayton had the procedure that we couldn't do it again, but now the cancer is back."

The 11-year-old Labradoodle is the first patient in a clinical trial that is testing the use of gold nanoparticles and a targeted laser treatment for solid tumors in dogs and cats. The study is one of several new treatments for client-owned companion animals at the college. In January, the college established the Veterinary Clinical Research Office to help facilitate this work.

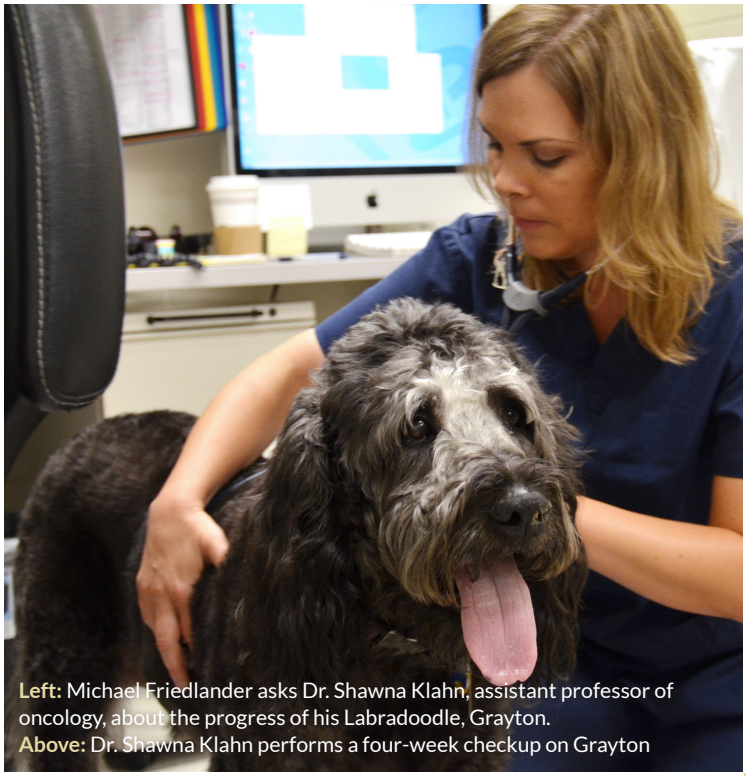
"Clinical research at the veterinary college involves both primary research focused on advancing the treatment and diagnosis of veterinary diseases and translational research in which spontaneous diseases in animals can be used as models of human disease," said Dr. Greg Daniel, head of the Department of Small Animal Clinical Sciences. "In the latter situation, we can provide our companion animal patients with treatment and diagnostic options that are not yet available in mainstream human medicine."

Worth its weight in gold

Although medical researchers have tested gold nanoparticles with targeted laser treatments on human patients with some success, the treatment is still new to both human and veterinary medicine. The college is one of four veterinary schools around the country testing the AuroLase therapy developed by Nanospectra Biosciences, Inc., a startup company based in Houston, Texas. The others are Texas A&M University, the University of Wisconsin-Madison, and the University of Georgia.

Dr. Nick Dervisis, assistant professor of oncology in the Department of Small Animal Clinical Sciences, is leading the Nanospectra-funded study. Following a rhinoscopy performed on Grayton by Dr. David Grant, associate professor of internal medicine, Dervisis began the one-time, experimental therapy.

"The treatment involves two phases," Dervisis said. "First, we infuse the patient with the gold nanoparticles. Although the nanoparticles distribute throughout the body, they tend to concentrate around blood vessels associated with tumors. Within 36 hours, they have cleared the bloodstream except for tumors. The gold nanoparticles are small enough to circulate freely in the bloodstream and become temporarily captured within the incomplete blood vessel walls



Left: Michael Friedlander asks Dr. Shawna Klahn, assistant professor of oncology, about the progress of his Labradoodle, Grayton.
Above: Dr. Shawna Klahn performs a four-week checkup on Grayton

common in solid tumors. Then, we use a non-ablative laser on the patient."

Dervisis explained that a non-ablative laser is not strong enough to harm the skin or normal tissue, but "it does cause the remaining nanoparticles to absorb the laser energy and convert it into heat so that they damage the tumor cells."

Like all clinical trials, the study involves many unknowns, including the treatment's usefulness and effectiveness. One month after the AuroLase treatment, the nosebleeds that initially brought Grayton back to the Veterinary Teaching Hospital had stopped and Grayton has no other side effects.

"I'm delighted with the care and service that Grayton has received at the veterinary college," said Friedlander, who explained that the treatment appears to be safe even though researchers do not know whether it is effective yet."

The latest in veterinary medicine

Current clinical trials at the veterinary college range from the use of MRI to distinguish between benign and cancerous lymph nodes in dogs with oral melanoma, to a new chemotherapy drug for dogs with brain tumors, to the treatment of invasive skin cancer in horses with high-voltage, high-frequency electrical pulses.

Mindy Quigley, who oversees the college's Veterinary Clinical Research Office, explained that veterinary trials, which follow a four-phase process and a variety of regulations similar to human medicine, have another layer of complexity that human trials do not.

"Variation among species means that a therapy that has proven safe and effective in, for example, humans or dogs, may not work for horses," said Quigley, who comes to the college from the University of Edinburgh's College of Medicine and Veterinary Medicine, where she helped set up a new neurology research clinic with funding from author J.K. Rowling. "Many veterinary clinical trials must therefore take therapies that have worked in one species and test them in other species with similar conditions. This is a necessary step to determine if a proposed treatment is safe and effective for our companion animals."

Grayton may be the first companion animal in the AuroLase study at the veterinary college, but he certainly won't be the last. Dervisis is continuing to enroll patients in the study and is seeking dogs and cats of a certain size with solid tumors who have not recently received radiation therapy or chemotherapy.

For more information about clinical trials at the college, visit the Veterinary Clinical Research Office website at *www.vetmed.vt.edu/clinical-trials/*.

Willow, the whippet

When Cathy Nunn, research nurse manager at Wake Forest University's School of Medicine, learned that her 11-year-old whippet, Willow, had mitral valve disease, she decided to turn a difficult situation into a way to help others. Nunn and her dog traveled from Winston-Salem, North Carolina, to Blacksburg, Virginia, to participate in a clinical study at the veterinary college.

Dr. Michele Borgarelli, associate professor of cardiology in the Department of Small Animal Clinical Sciences, is assessing the accuracy of heart sonograms in determining blood pressure in the pulmonary vessels in dogs with heart valve disease.

"Allowing your pet to participate in clinical research is a win-win opportunity," Nunn said. "You not only gain access to the best in veterinary care, but you also contribute to the health and well-being of other animals both now and in the future."

New research network a "win-win" for all parties

When 7-year-old miniature schnauzer, Leyna, was having seizures, her worried owners, Matthew Moore and Frank Saltarelli of Washington, D.C., knew they wanted the best possible care for her. Their local veterinarian performed a variety of tests, only to learn that Leyna had an aggressive glioma brain tumor.

After a consultation with Bush Veterinary Neurological Services, Moore and Saltarelli learned about a clinical trial at the Virginia-Maryland College of Veterinary Medicine for dogs with gliomas, dangerous tumors with low chances of survival.

They decided to enroll Leyna in the study and now, three years later, she is not only still alive, but thriving.

The college is now expanding enrollment in clinical trials like the one that helped Leyna. This summer, a Collaborative Research Network was formed to enable specialty practices in Virginia and Maryland to participate in the veterinary college's cutting-edge research.

"Because the number of cases seen in the greater Washington, D.C., Richmond, and Baltimore areas far exceeds the number seen in Blacksburg, the establishment of this specialist referral network is already increasing our ability to complete clinical trials quickly," said Mindy Quigley, clinical trials coordinator at the veterinary college. "And by increasing the number of cases within our studies, the results and findings will have greater scientific merit."

The Collaborative Research Network brings together specialty practices with advanced services such as 24-hour emergency care, on-site diagnostics, on-site cross-sectional imaging, and board-certified specialists in the college's major research areas.

Six veterinary practices have already joined the network, including Dogwood Veterinary Specialty and Referral Center in Richmond, Virginia; VCA Southpaws in Fairfax, Virginia; VCA Veterinary Referral Associates in Gaithersburg, Maryland; The LifeCentre in Leesburg, Virginia; The Hope Center in Vienna, Virginia; and the Chesapeake Veterinary Referral Center in Annapolis, Maryland.

Dr. Bill Tyrrell, medical director at The LifeCentre, explained that participation in the Collaborative Research Network offers a "tremendous benefit" for specialty practices.

"We do independent research at The LifeCenter and have FDA trials here, but we don't have some of the resources available at the veterinary college, such as access to statisticians or National Institutes of Health funding," said Tyrrell, a 1992 alumnus of the college. "If we can help out in the Collaborative Research Network by referring clients to clinical trials, it's a win-win for both parties."

Dr. Greg Daniel, head of the veterinary college's Department of Small Animal Clinical Sciences, echoed that sentiment. "We see this as a real two-way exchange," he said. "In the future, we want to utilize the experience and expertise of the specialists in our Collaborative Research Network to refine and improve our research protocols or explore new research directions."

The college maintains a complete list of current trials on its new clinical trials website at *www.vetmed.vt.edu/clinical-trials/*. Current trials are underway with dogs, cats, and horses.

Top: Miniature schnauzers Leyna (left) and Maxwell have both been treated at the Veterinary Teaching Hospital. Leyna participated in a clinical trial that successfully treated a brain tumor three years ago, while Maxwell had cataract surgery.

Collaborative Research Network Veterinary Partners

The LIFECENTRE
Redefining Veterinary Emergency & Specialty Care

CVRC
Chesapeake Veterinary Referral Center

VCA Advanced Care for Pets | Veterinary Referral Associates

hope ADVANCED VETERINARY CENTER

Dogwood veterinary emergency & specialty center

SouthPaws VETERINARY SPECIALISTS & EMERGENCY CENTER

GINGER'S NEW LEASE *on life*

When Janet Lewis and Tony Benvenuto brought their 2-year-old miniature horse, Ginger, to the Veterinary Teaching Hospital this summer, they were unsure about her future. Ginger had a dislocated hip and could not use her left leg. To make matters worse, she had a locked stifle joint — a secondary injury — and was in pain.

Ginger's owners knew that euthanasia was a good possibility because "gimping around a pasture" was not an option they would consider for her. But after a surgical procedure rarely performed on horses, Ginger was able to walk again and return to her home in Central Virginia within a week.

Lewis and Benvenuto, who own Standing Ovation Miniatures in Concord, Virginia, did not expect such surprising results.

"She's a once in a lifetime horse for us," said Lewis, who explained that Ginger has a unique appearance and beautiful disposition. "We got lucky. We were in the right place at the right time."

Because Ginger is large for a miniature horse, clinicians decided to perform a surgical procedure called a femoral head ostectomy, which is more commonly performed on dogs. In surgery, Dr. Elsa Ludwig, a large animal surgery resident, performed this procedure and another one to fix the locked joint at the same time.

Dr. Chris Byron, associate professor of large animal surgery and senior clinician on the case, described Ginger as a "calm, sweet, and personable" patient. Sarah Low, a fourth-year veterinary student assigned to the case, added that the case management was interesting because Ginger was also pregnant with a May due date.

Lewis and Benvenuto gave glowing reviews of Ginger's care team and report that Ginger has recovered post-surgery. The two explained that they purchased Ginger, along with her mother, when Ginger was a yearling. Benvenuto has a farm in nearby Monroe, Virginia, while Lewis keeps the breeding stock in Concord.

"But after a surgical procedure rarely performed on horses, Ginger was able to walk again and return to her home in Central Virginia within a week."

Miniature horses like Ginger are companion animals and typically only a few feet tall. Owners selectively breed them for certain characteristics and register them through the American Miniature Horse Registry, which has been around since 1971. Although Ginger was a champion in miniature horse shows as a yearling, her owners no longer show her because she was not a fan of horse shows.

"We just want her to be happy," Lewis said.

COLLEGE DIVERSITY on the RISE

The Virginia-Maryland College of Veterinary Medicine is doing its part to increase the diversity of the veterinary profession.

The Virginia-Maryland College of Veterinary Medicine can lay claim to one of the most diverse DVM student populations in the country.

"The number of diverse students in our community has significantly increased over the past two years," noted Dr. Jacque Pelzer, director of admissions and student services. "This is the result of a focused recruitment effort, as well as a welcoming environment."

Since 2012, the college has seen just over a 50 percent diversity increase in its student population including African-American, Asian, Hispanic, and Latino students, as well as those who identify as gay. In a field that has most recently been dominated by female students, the college has also had successes in male student recruitment and retention.

"We're very excited about this trend that is creating an enriched learning environment for our students," said Pelzer. "Our student culture is changing to mirror society and its needs."

The college graduated its first Doctor of Veterinary Medicine class in 1984 and its first African-American doctors of veterinary medicine two years later. Two females, Dr. Lynn Hoban and Dr. Margie Lee, hold that distinction.

Today Hoban (DVM '86) owns and operates her own practice, Friendship Pet Hospital, in Fountain Hills, Arizona. Lee, who is also a member of the college's Class of 1986, is a professor at the University of Georgia's College of Veterinary Medicine, Athens, Georgia, where she also received her master's and doctoral degrees in medical microbiology.

The first African-American male graduated from the college four years later. Dr. Mario Dance (DVM '90) now works as a clinical veterinarian in charge of animal care at Virginia Commonwealth University in Richmond. For almost 15 years, he has also served as a consulting veterinarian with the Veterans Administration providing animal care and research consultation.

In 2010, students at the college founded a chapter of the national organization VOICE - Veterinary Students as One In Culture and Ethnicity. Its goal is to celebrate the cultural and ethnic diversity in the veterinary community and to promote a culture of tolerance and awareness.

"[The chapter] provides a platform for discussion of sociocultural issues within the profession and our communities," said Dr. Ed Monroe, professor of small animal internal medicine and the chapter's faculty advisor.

Right: Dr. Sherrie Clark, associate professor of theriogenology in the Department of Large Animal Clinical Sciences, speaks about swine health on a farm tour with first-year veterinary students.

Below: Veterinary students in a theriogenology course take the vital signs of an alpaca. Members of the Food Animal Practitioners Club also participated in the hands-on experience.

Current Class of 2018 stats

120 Accepted Students

35 Males

85 Females

19 Students self-identified as:

- Asian
- Hispanic
- Native-American
- African-American

> We're very excited about this trend that is creating an enriched learning environment for our students," said Pelzer. "Our student culture is changing to mirror society and its needs.

New student group looks to boost women leaders in veterinary medicine

Veterinary students at the college are leading national efforts to increase the number of female leaders in the profession.

Virginia-Maryland Vet Med is one of three U.S. veterinary schools to launch a new student chapter of the Women's Veterinary Leadership Development Institute (WVLDI). Charter chapters were also introduced at Cornell University and Texas A&M.

Since its establishment last spring, the Virginia-Maryland student chapter assembled a leadership team and hosted a panel discussion with female faculty members at the college.

"The main reason we are doing this is to empower women," said third-year student Maria Romano, who is vice president of public relations for WVLDI. "We want women in veterinary school to know that they are not alone in the obstacles they face taking on leadership positions and the struggles they will continue to encounter as they navigate through their respective careers."

Although the majority of veterinarians and approximately 80 percent of veterinary students are women, few hold leadership roles in academia or professional associations. Women account for only six out of 30 veterinary college deans in the United States and about one-fifth of leadership positions in the American Veterinary Medical Association, both statistics that mirror the gender ratio in Congress.

"Studies indicate that having as few as 30 percent women on an executive board increases profitability," said Betsy Schroeder, a dual degree DVM/Ph.D. student and co-president of the group. "By promoting women's leadership, everyone benefits. A rising tide elevates all ships."

Above: The founding members of the Virginia-Maryland chapter of the new women's leadership group include (left to right) Betsy Schroeder, Allison Smith, Maria Romano, Sara Waltz, and Laura Turner.

Regenerative Medicine

Treatments at the Equine Medical Center in Leesburg stimulate the body's own repair mechanisms

The Marion duPont Scott Equine Medical Center has turned a promising idea into innovative and effective treatments for a variety of conditions. Regenerative medicine — a term first coined in the 1990s — has moved from scientific journals into the clinics and turned debilitating injuries into success stories.

Whether extracting stem cells from a horse's bone marrow to regrow tissue, injecting concentrated levels of platelets from a patient's blood to start the healing process, or performing surgery to stimulate the body's own ability to regenerate, researchers at the center are using a wide range of techniques that were unavailable just a decade ago.

"We are a national center for stem cell therapy and work with clients and referring veterinarians all around the country," said Dr. Jennifer Barrett, the Theodora Ayer Randolph Professor of Equine Surgery.

Stem cell therapy has made headlines in recent years for its potential to treat numerous conditions. Stem cells are unspecialized cells that have the ability to turn into any other type of cell. In adults, these cells are a part of the body's repair system and are capable of reforming damaged tissues. Since joining the center's faculty in 2007, Barrett has been using stem cell treatments to treat lameness problems in both horses and dogs.

Photos by: Logan Wallace

"What makes us unique is that we ship stem cells cold rather than frozen," said Barrett, who is a faculty member in the Department of Large Animal Clinical Sciences. "I have found that it takes several days for stem cells to fully activate after freezing. Instead of waiting, our shipment method allows the cells to remain active and they can promote healing faster."

Barrett emphasized that the center uses stem cells from a patient's own body, not donor cells. "Our approach has always been to extract cells and tissue from the patient that are already present and capable of making new tissue but may not do so without medical intervention," she said. "We have recently introduced a new service where we extract umbilical cord stem cells and cryo-preserve them for future use."

The center also offers treatments involving platelet-rich plasma, a substance derived from a patient's blood and run through a centrifuge to separate the less dense components from the heavier ones. Five times richer than regular blood, platelet-rich plasma has an abundance of growth factors — proteins in the body that stimulate cells in the tendon or ligament to start the healing process. "Regenerative medicine works best in cases where a patient is either not healing or has a severe tendon injury," said Barrett, who has both a doctor of veterinary medicine degree from Cornell and a doctorate in molecular and cell biology from Yale.

Although both the stem cell and platelet-rich plasma treatments were developed at the center for horses, Barrett soon learned that the process could work for another popular four-legged species. "Although we only treat horses at the equine medical center, our Regenerative Medicine Service is available to small animal veterinarians as well," she said. "Dogs actually make up about 50 percent of the lab's caseload."

Other treatments involve using an enriched blood serum with anti-inflammatory properties to treat damaged cartilage and what Barrett describes as the "Cadillac treatment" — surgery to stimulate stem cells in tendons and ligaments used in conjunction with other treatments.

Outside of the clinic, Barrett and her colleagues conduct research on improving treatments and creating new ones. A handful of faculty members at the veterinary college are also conducting regenerative medicine research on topics ranging from blood vessels to traumatic brain injuries. The college also entered into a research agreement to create the Virginia Tech/Wake Forest Center for Veterinary Regenerative Medicine in 2011 and collaborates with other colleagues at Virginia Tech through a new interdisciplinary graduate education program on regenerative medicine.

Barrett is bullish on the future of regenerative medicine because, in many cases, researchers have been able to bring treatments to horses and other species before they can be brought to people. "There's a lot more that we can do in this field and I look forward to seeing some of these treatments in human patients in the future."

Left: Hannah Dawson, laboratory specialist, feeds stem cells from bone marrow. **Center:** Andrew Hogan, client care and laboratory specialist, examines canine adipose tissue for stem cell isolation. **Right:** Dr. Jennifer Barrett gives a horse an ultrasound-guided tendon injection.

Below: Petunia has made a full recovery from her ligament injury and has recently started eventing.

A second spring for Petunia

When Northern Virginia resident Jennifer Lucier began searching for her first horse in 2009, she saw several horses before Petunia, a 7-year-old American Quarter Horse cross, caught her eye.

"It was a lifelong dream come true when I found her," said Lucier, who lives in Arlington, Virginia, and keeps her horse about 50 miles west in Delaplane, Virginia. "She was exactly what I was looking for."

Two years later, Petunia suffered a health scare that brought her to the Marion duPont Scott Equine Medical Center in Leesburg, Virginia.

When Petunia tore the suspensory ligament in May of 2011, Lucier sought the advice of her veterinarian, Dr. Jessica Williamson of Haymarket Veterinary Service. Williamson saw the injury and referred Petunia to the Equine Medical Center's Dr. Jennifer Barrett, associate professor of equine surgery and director of the center's Regenerative Medicine Service. Barrett performed an ultrasound and determined that Petunia was a good candidate for stem cell treatment because of her age and the location of the tear.

"I was told that she had a 60-80 percent chance of a full recovery with the treatment," Lucier said.

"Dr. Barrett collected stem cells from the bone marrow in Petunia's sternum and injected them into the site of the tear after a few weeks of cell growth."

According to Lucier, the treatment seemed to jump start the healing process for Petunia. It not only promoted tissue growth, but also stopped scar tissue from forming. Petunia also received platelet-rich plasma treatments at the Equine Medical Center's Regenerative Medicine Service.

"Nine months from the date of the injury, she was back walking under the saddle," said Lucier, who explained that Petunia's alternative would have been to rest in her stall and hope for the best. "Petunia is 100 percent back to full work, and we recently started eventing. We have check-ups at the Equine Medical Center every six months to track her progress."

Lucier hopes that Petunia's success story will bring awareness to horse owners about regenerative medicine's potential. "If your horse is a good candidate for stem cell treatment, it can provide results that will advance the healing process."

NIH grant used to develop high-resolution virus views

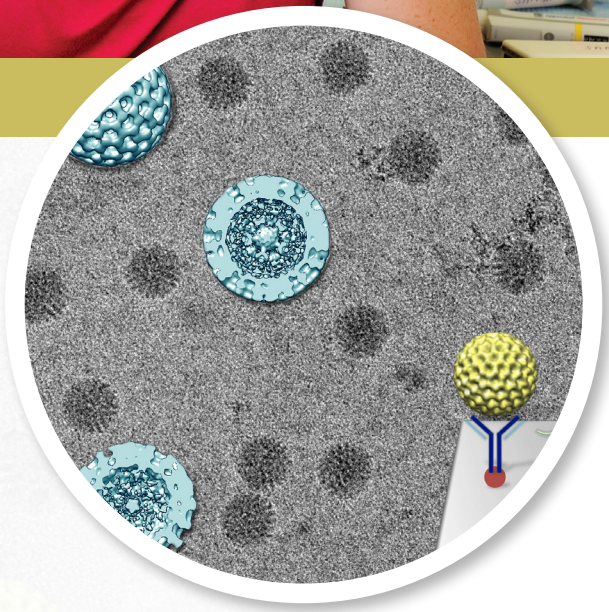
Dr. Sarah McDonald, an assistant professor in both the Department of Biomedical Sciences and Pathobiology and the Virginia Tech Carilion Research Institute, wants to create better vaccines to treat a virus that kills more than 500,000 children under the age of five in developing countries. She and a colleague recently received a National Institutes of Health grant to develop new imaging technology to see rotavirus in action.

Rotaviruses have three layers, including an innermost layer containing the genetic material and enzymes needed to create more viruses and an outermost layer that the virus sheds when it becomes active. When this happens, the RNA snakes out of the virus, which takes a form called an active double-layered particle.

"The first aim of our grant is to use cryo-electron microscopy to image actively transcribing double-layered particles in a greater level of detail than is currently known," McDonald said.

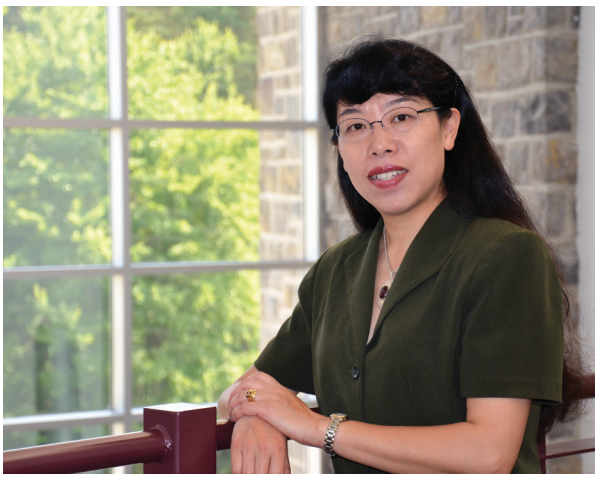
This higher resolution may lead to a better understanding of the functions of rotavirus.

"For the past two decades, the only available 3-D structures of actively transcribing double-layered particles have been at lower resolution," McDonald said. "These active particle structures show messenger RNA exiting the double-layered particles, but they don't reveal any detailed features inside the particles."



Top: Dr. Sarah McDonald, assistant professor of virology in the Department of Biomedical Sciences and Pathobiology, hopes that new, higher resolution imaging technology will lead to a better understanding of the functions of rotavirus. **Photo by:** Jim Stroup

Bottom: In this 3-D reconstruction of rotaviruses, the orderly golf-ball appearance indicates dormancy. The outer shell becomes disorganized as activity inside the rotavirus increases.



Above: Dr. Lijuan Yuan, associate professor of virology and immunology.

Dr. Lijuan Yuan receives Gates Foundation grant for rotavirus work

Dr. Lijuan Yuan, associate professor of virology and immunology in the Department of Biomedical Sciences and Pathobiology, has been advancing her research on gastrointestinal diseases since she arrived at the college in 2007. This summer, she won a Grand Challenges Exploration grant from the Bill & Melinda Gates Foundation to take her research even further.

The 18-month, $100,000 grant supports Yuan's work on rotavirus, a leading cause of infectious diarrhea in developing countries. Yuan is developing a gnotobiotic pig model to better understand how an imbalance of gut microbes, as well as a compromised intestinal immune system, negatively impacts the rotavirus vaccine's effectiveness.

Although the vaccine has proven effective in the developed world, infants in developing countries often have a weak immune response to it. The ultimate goal is to develop better vaccines that prevent infections among infants and children around the world.

MPH student joins Virginia Tech Board of Visitors

Ashley Francis already had quite the résumé before her recent appointment as the graduate student representative to the Virginia Tech Board of Visitors. The second-year Masters of Public Health student of Blacksburg, Virginia, is serving a one-year term.

Francis works as a graduate assistant in student services with a focus on program planning and development for the Graduate Life Center. After receiving her undergraduate degree in human nutrition, foods, and exercise at Virginia Tech, Francis was a health educator and outreach coordinator for the Richmond City Health District and taught high school sciences in the Gaston, North Carolina Teach for America program.

What's more, Francis is a professional actress, performing in stage, television, short film, and commercial roles. She also volunteers at Blacksburg's Lewis Gale Hospital and has been recognized by the United States Navy for her work in sexual assault prevention and response.

Martin awarded national AABP/Zoetis bovine scholarship

Brendan Martin of Mt. Solon, Virginia, received a $5,000 AABP Foundation – Zoetis Veterinary Student Scholarship to support his career in large-animal veterinary medicine.

The national scholarship is awarded to 15 veterinary students each year.

A member of the college's Food Animal Practitioners Club, the fourth-year veterinary student also received an expenses-paid trip to the 2014 American Association of Bovine Practitioners Annual Conference in Albuquerque, New Mexico.

The 24-year-old grew up on a beef cattle, poultry, and crop farm in Augusta County, Virginia where he helped his Dad background steers and helped his cousins with their dairy. Martin's career goal is to obtain a job in a progressive bovine practice where he can "work with producers and their livestock in a rural setting. I plan to own a farm myself and continue to operate a cow/calf herd," he said.

Class Acts: These faculty members represent the four departments at Va-Md Vet Med – Small Animal, Population Health Sciences, Large Animal, and Biomedical Sciences and Pathobiology.

Nick Dervisis

Assistant Professor of Oncology, Department of Small Animal Clinical Sciences
Years at Va-Md Vet Med: 2

Why did you choose to work at Virginia Tech and Va-Md Vet Med?
Starting a new oncology service, teaching, and conducting research sounded like a challenge, and I like challenges! Meeting the people of Virginia Tech and Va-Md Vet Med won me over!

What do you love most about your work at the vet school?
The variety my job offers. Every day is different.

If you could choose one animal to be like, what would that be and why?
A cheetah - I love speed.

Do you have any pets? If so, what and how many?
A dog with neuro deficits and skin allergies, and a cat with cancer.

Your favorite place to travel?
Easter Islands

What would you attempt if you knew you could not fail?
I don't let fear of failure prevent me from attempting things. Fear of failure drives me to be better.

What is your greatest accomplishment?
Yet to come...

Susan West Marmagas

Associate Professor of Practice. Assistant Director, Master of Public Health Program. Department of Population Health Sciences
Years at Va-Md Vet Med: 5

What do you love most about your work at the vet school?
Partnering with such a dedicated faculty team to build the MPH program and engaging with outstanding students who possess "a fire in their belly" for the field of public health, be it human, animal, or the intersection of both.

What is a fact about you that few people know? My first day at Virginia Tech was April Fools Day, the same day that we got the "call" about our adoptive daughter, Elektra. She was placed in our arms the following day.

Your favorite restaurant to eat at in Blacksburg? My husband and I drive to the Palisades Restaurant in Eggleston (Giles County) for date night.

Your favorite place to travel?
Hands down its Santorini, an island in the Cyclades in Greece. One of the most romantic places in the world.

Who do you admire? Judge Sonia Sotomayor. Her journey from her roots inspires me. Her leadership is contagious. She is a role model for my Latina daughters.

Kevin D. Pelzer

Professor of Production Management Medicine / Epidemiology. Department of Large Animal Clinical Sciences
Years at Va-Md Vet Med: 27

If you could choose one animal to be like, what would that be?
A Nubian goat. They have roman noses and that's my most prominent feature. They also have big ears which I had before my face grew into them. Nubians are also the loudest and most vocal of the goat breeds so they fit my personality.

What are you most proud of?
My two daughters, Noelle and Marie.

What would you attempt if you knew you could not fail? A chef. I like to cook but have no talent at making a plate of food look elegant.

Do you have any pets? If so, what and how many?
A former teaching lab dog, a border collie/blueheeler, and a standard poodle – don't ask. A chinchilla – don't ask. Six cockatiels because I couldn't find homes for four of them. Seven cats – named Little Sparkle, Murray, Pumpkin, Kitten, a former feral kitten, Special Ed and Sierra, rescued from a hay wagon, and Martini – don't ask. Oh yeah, and a rabbit. Too many.

Marion F. Ehrich

Professor of Pharmacology / Toxicology. Department of Biomedical Sciences and Pathobiology
Years at Va-Md Vet Med: 34

What is a fact about you that few people know? I came from a town so small that it isn't even found on most maps. There were 18 in my graduating class and only two went on to college. The town had no restaurant, no physician, no clothing store. Now it doesn't even have a grocery or a school.

What are you most proud of?
Increasing diversity in toxicology by serving as PI on a diversity grant for the Society of Toxicology.

What do you love most about your work at the vet school?
The collegiality among faculty, students, and staff; the feeling that we are all working together.

Your favorite place to travel?
Germany-Switzerland-Austria because I can manage the language and the history. The culture and scenery are very interesting.

What is your greatest accomplishment?
Playing the piano well enough to provide music at the veterinary college graduation ceremonies.

Book sets Sarah Krones on life's path

Third-year veterinary student Sarah Krones of Ijamsville, Maryland, knows the power of a book. She was only 10 years old when she read British veterinarian James Herriot's *All Creatures Great and Small*. "After reading that book, I knew I wanted to be a veterinarian," she said.

Jump forward to 2014, where Krones represents the best of the best at the veterinary college. She not only is pursuing the public and corporate veterinary medicine track and earning a dual Master of Public Health degree, but also plans to use her education to help underserved populations.

In January, Krones was among a small group of U.S. students invited to the International Veterinary Students' Association (IVSA) symposium in Turkey. This summer, she traveled to Indonesia to represent U.S. students at the IVSA Congress.

"I spent a lot of time exchanging stories about anatomy lab, commiserating on scrub colors, and learning about the focus of vet med in other countries," she wrote about her trip to Turkey. "I found I was more often reaching out of my comfort zone to interact with students from Tunisia, Algeria, South Korea, and Indonesia, sharing stories from home, comparing clothes and language, and learning about their exam schedules and how they set up rotations."

In addition to the cultural experience and lectures on veterinary topics, international opportunities help Krones connect with peers across the globe. "Once we graduate, we'll have this professional network of contacts from around the world that can aid our practice as veterinarians," she said.

Krones has been busy not just abroad, but on campus as well. She's served as an officer in several student organizations and founded the One Health Club at Virginia Tech.

> "Once we graduate, we'll have this professional network of contacts from around the world that can aid our practice as veterinarians."

Photos by: Logan Wallace

Valedictorian Casey Burke follows family tradition

For Dr. Casey Burke of Luray, Virginia, graduating from veterinary college was a dream come true. Another part of that dream was to be the Class of 2014 valedictorian, which she accomplished as well.

Could a tad of sibling rivalry have been the impetus behind such lofty goals? Casey's only sibling, Dr. Nathaniel Burke, graduated as the college's valedictorian in 2011 when she was in her first year of vet school. Such family scholastic prominence is virtually unheard of in any academic major, but especially in professional schools such as medicine or law.

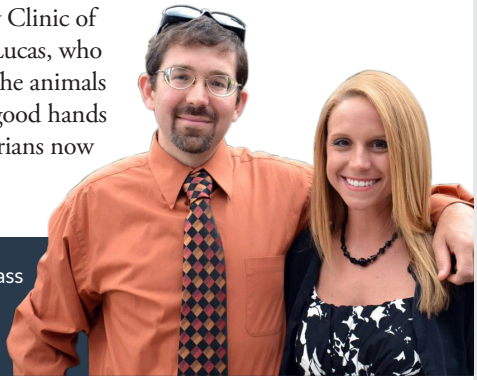
"This is the first time the veterinary college has had more than one valedictorian from the same family," said Dr. Jacque Pelzer, director of admissions and student services. "It's not only difficult to get into veterinary school, but it's even more difficult to have the highest academic scores in your class."

When the Page County native started at the college, Burke knew she had some big shoes to fill due to her brother's success. "I just tried to take it class by class, semester by semester, and do my absolute best academically," Burke said. "My parents are both schoolteachers who instilled in me a strong work ethic and a respect for the classroom."

Their daughter grew up on the family farm and during her undergraduate years at Virginia Tech, she decided to pursue her childhood dream to become a veterinarian.

"When I was growing up, I thought, 'I want to be a vet,'" she said. "But when I got to high school, I moved away from that idea. I knew I wanted to go into a medical field, so I majored in biology in college. After my sophomore year, I came home for the summer and worked with an ambulatory veterinary service. It was the first job that made me really excited to get up in the morning." As a result, she pursued the college's food animal track before graduating and returning to her hometown.

Brother Nathaniel works at The Luray Clinic of Veterinary Medicine with Dr. Aaron Lucas, who was the college's 2010 valedictorian. The animals of Page County are no doubt in very good hands with three veterinary college valedictorians now practicing there.



Right: Dr. Nathaniel Burke at the DVM Class of 2014 commencement ceremonies with his sister, Dr. Casey Burke Austin.

ALUMNI CORNER: Where Are They Now?

A Celebration of Our Alumni and Their Achievements

Dr. Joshua Louis Lachowicz — Musician with a heart for animals

Dr. Joshua Louis Lachowicz (DVM '02) found the perfect way to blend his passion for animals with his love of music.

The board-certified veterinary oncologist practices at Blue Pearl Veterinary Partners in New York City. He co-founded the Joshua Louis Animal Cancer Foundation to spread awareness about cancer treatment for animals and offer assistance to pet parents who can't afford cancer care for their animal.

An accomplished pianist, he writes songs based on his experiences with animals and his oncology work, and then performs and sells his music through the foundation. Learn more at *www.joshualouis.org*

Dr. Krista Magnifico — Woman of many talents

A merchant marine, a veterinarian, and now a social media pioneer, Dr. Krista Magnifico (DVM '05) wears many hats.

Magnifico is the owner of Jarrettsville Veterinary Center, a large, busy small animal practice in Jarrettsville, Maryland, about 30 miles north of Baltimore. Three years ago, she launched Pawbly, a free social network for people who are passionate about pets. On the popular site, answers are provided to pet-related questions and visitors can connect with local and national animal health experts.

"Many of the people who come to Pawbly or other social media outlets are looking for ways to avoid going to the vet, but in many cases, going to the vet is the best thing they can do for their pet," she said.

Center for Public and Corporate Veterinary Medicine headquartered in Blacksburg

This summer, the college moved its Center for Public and Corporate Veterinary Medicine from College Park, Maryland, to Blacksburg, Virginia. The center, which has more than two decades of experience training students for fields outside of traditional private practice, will continue as one of the distinctive programs that differentiates the college from its peers.

Faculty at the center teach courses, advise students, coordinate senior veterinary student clerkships, and develop programs that advance public and corporate veterinary medicine.

"Because the majority of these activities involve direct interaction with veterinary students on the Virginia Tech campus, administration of the center was transferred from College Park to Blacksburg, decreasing the need for faculty travel between the two campuses," said Dr. Cyril Clarke, college dean.

Center director Dr. Valerie Ragan recently named Dr. Bess Pierce, associate professor of community practice, as the newest member of her Blacksburg team. Both Ragan and Pierce have joined the college's Department of Population Health Sciences. According to Clarke, this will not only strengthen the connections between the MPH and Doctor of Veterinary Medicine programs, but also advance the college's commitment to One Health.

Above: Dr. Valerie Ragan of the Center for Public and Corporate Veterinary Medicine.

The center will continue to maintain a presence in the Washington, D.C. area near the many agencies necessary for its success. Three additional faculty positions tied to the center will be housed on the College Park campus.

India program provides wealth of experiences

A partnership between two universities on opposite sides of the globe is giving invaluable, first-hand experiences to students at both institutions of higher education.

The Virginia-Maryland College of Veterinary Medicine began its partnership with Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) in Chennai, India, seven years ago. The program involves a summer exchange of Virginia-Maryland and TANUVAS veterinary students, practicum training for the college's Master of Public Health students, and training of TANUVAS faculty in research methodologies in Blacksburg. The two universities recently approved a dual Ph.D. program and hold an annual research symposium in Chennai.

The Virginia-Maryland students in the exchange program enroll in a two-credit elective course entitled, "International Clinical Veterinary Medicine." During the first three weeks, students rotate through clinical services at the TANUVAS teaching hospital in Chennai, attend lectures, and visit local animal research facilities. Students benefit from exposure to veterinary cases that occur frequently in tropical and subtropical climates, but not often in the United States.

This summer, Dr. Cyril Clarke, dean of the college, visited Chennai to review the international program. "This course provides an ideal opportunity for our students to learn more about the inextricable links between animal and public health, and gain a global perspective on animal diseases that have a significant impact on economic development and food safety," said Clarke. "Such experience is directly relevant to our strategic vision of advancing One Health."

Under the leadership of Dr. Elankumaran Subbiah and Dr. Nammalwar Sriranganathan of the Department of Biomedical Sciences and Pathobiology, the course also takes students to another veterinary school in Namakkal for two weeks, where they gain experience in a more rural location. The final week is spent visiting wildlife facilities, a sheep breeding research station, and historic and cultural sites.

Above: Some of the eight DVM students who traveled to India in 2014 with Dr. Elankumaran Subbiah (far right) are shown meeting with the Honorable T.K.M. Chinnayya, Minister for Animal Husbandry, Government of Tamil Nadu.

Photo by: Dr. Cyril Clarke

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Upcoming Events

January 9 — 4th Annual Equine Conference for Veterinarians

March 6 — Human-Animal Bond Symposium

April 3 — DVM Program Spring Awards Luncheon

April 11 — 2015 Annual College Open House

Spring Dog Wash — Stay tuned to our website and Facebook for more information.

Make a Difference

It's always a great time to give! By helping us to advance our strategic priorities and fulfill our mission of training veterinarians, your gifts also benefit pet owners, industry, and society at large.

To support or learn more about ways to give, contact our Development Office at: 540-231-4716 or www.vetmed.vt.edu/development

Join the Conversation!

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Above: Dudley, a 12-year-old golden retriever will enjoy several more years of fun-filled life thanks to a successful surgery at the Veterinary Teaching Hospital. Dr. Bess Pierce, associate professor of Community Practice, removed a large tumor from his abdomen in June. His caregivers included community practice resident Dr. Virginia Corrigan and fourth-year veterinary student John Gil. According to his owner, Dr. Cyril Clarke, who is also the college's dean, Dudley and his housemate, Skittles the cat, very much appreciate the compassion and competence they receive at the college's Small Animal Community Practice.