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Scoping Out Doping:
Penn Vet Researchers Put the Brakes on Performance-Enhancing Drugs in Racehorses
We'd like to hear your praise, criticisms or comments. Please address your correspondence to: Office of Development and Alumni Relations University of Pennsylvania School of Veterinary Medicine 3800 Spruce Street, Philadelphia, PA 19104-6010 (215) 898-1480

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about the cover:
Penn Vet researchers at Pennsylvania’s Equine Toxicology Laboratory have developed the premier program for effective testing for artificial substances such as steroids. Read about their work starting on page 4.
Spring is in full cry in Philadelphia and Kennett Square. The grass is growing so fast you can hear it, and the spring sounds—birds, frogs, rain—are a pleasant soundtrack for our days. Penn Vet goes through our own annual cycle of renewal—we look forward to the new senior class entering clinics; we are starting our season of celebratory events, beginning with the second World and Student Inspiration Awards; followed by the teaching awards, alumni day, and graduation, among others.

Spring is also of course the annual time of the Triple Crown, an event that has brought enormous joy and excitement, but has been marred in recent years by tragedy and speculation about performance-enhancing substances and their impact on equine health. Fortunately, one of Penn Vet’s scientists, Dr. Larry Soma, and his collaborators at Pennsylvania’s Equine Toxicology Laboratory have developed the premier program for effective testing for artificial substances such as steroids. Quality science, applied wisely, can ensure the integrity of racing and protect its powerful, graceful athletes.

Putting quality science to work is fundamental to Penn Vet. We innovate in our laboratories, our clinicians apply new approaches in our hospitals every day. It sets apart our teaching and curriculum, and it helps us to keep the Commonwealth safe and its farms and food healthy.

Now, more than ever, veterinarians are needed to promote public health and help control zoonotic diseases. We are a unique resource within the health profession field, because we are the only health professionals trained in comparative medicine. And yet, the shortage of veterinarians has reached a critical stage; at a time when we need even more veterinarians, schools have been negatively impacted by the economy. I encourage you to become involved and to support Penn Vet and all schools of veterinary medicine. Together, we can build a stronger, safer world for animals and people, for every season.

—Joan C. Hendricks, V’79, GR’80
The Gilbert S. Kahn Dean of Veterinary Medicine
Building a faster racehorse: the dream of horsemen for hundreds of years, back to the days when horseracing was considered the sport of kings. As early as 1140, Henry I tried to make his “hobby horses” faster and stronger by breeding them with Arab stallions brought from the Crusades. Obviously, selective breeding has come a long way in the intervening centuries toward increasing a horse’s natural speed and endurance, but a modern phenomenon called “doping”—illegal application of a substance to improve a horse’s natural capacities at the time of a race—famously used by human athletes, has become a shortcut of choice to create a winning horse. Traditionally, the most commonly abused substances in horseracing have included anabolic steroids, etorphine, narcotic analgesics, erythropoietin (EPO), caffeine, beta blockers, butazolidin, bicarb and propantheline bromide. All these (along with hundreds of others) have been banned, and even substances not on the prohibited list of the Association of Racing Commissioners International cannot be administered on race day, or sometimes for up to even 30 days before a race. Enforcement of the ban requires effective monitoring, detection, identification and confirmation methods. Enter Dr. Lawrence R. Soma, V’57, Marilyn M. Simpson Professor of Large Animal Veterinary Medicine, and Dr. Cornelius E. Uboh, adjunct associate professor of pharmacy and pharmacology and director of the Pennsylvania Equine Toxicology and Research Laboratory (PETRL) in West Chester, Pa.

HOW PENN VET RESEARCHERS PUT THE BRAKES ON PERFORMANCE-ENHANCING DRUGS IN RACEHORSES

By Susan I. Finkelstein
IN 2006, DR. SOMA AND UBOH AND THEIR COLLEAGUES AT PENN VET AND PETRL BECAME THE FIRST IN THE WORLD TO DEVELOP A METHOD FOR CONFIRMING BLOOD-DOPING AGENTS—RECOMBINANT HUMAN ERYTHROPOIETIN (RH EPO) AND DARBEPOETIN-ALFA (DPO)—IN EQUINE ATHLETES BY TESTING PLASMA THROUGH LIQUID CHROMATOGRAPHY (SEPARATION) AND MASS SPECTROMETRY (IDENTIFICATION). PREVIOUSLY, ONLY THE ANTIBODIES CAUSED BY THE DRUG—NOT THE DRUG ITSELF—WERE DETECTABLE IN THE BLOOD. USED IN HUMAN AND SMALL ANIMAL VETERINARY MEDICINE TO TREAT CONDITIONS THAT PRODUCE ANEMIA SUCH AS CANCER, AND RENAL DISEASE, EPO IS A NATURAL HORMONE PROTEIN PRODUCED IN THE KIDNEYS THAT STIMULATES RED BLOOD CELL PRODUCTION; RH EPO AND DPO ARE GENETICALLY ENGINEERED VERSIONS OF EPO. THESE SYNTHETIC AGENTS HAVE BEEN ABUSED IN HUMAN ENDURANCE SPORTS AND HORSE RACING BECAUSE THEY ARE DIFFICULT TO DETECT AND THEY INCREASE HEMOGLOBIN, HEMATOCRIT CONCENTRATION (THE RATIO OF THE VOLUME OF PACKED RED BLOOD CELLS TO THAT OF WHOLE BLOOD) AND MAXIMAL OXYGEN UPTAKE (SINCE RED BLOOD CELLS CARRY OXYGEN)—HENCE IMPROVING SPEED AND ENDURANCE TIME. NOT ONLY DOES USE OF THESE AGENTS VIOLATE RULES OF FAIR COMPETITION, BUT DEATHS IN EQUINE AND HUMAN ATHLETES ALSO HAVE BEEN LINKED TO THEM. THE POTENTIAL HARMFUL EFFECTS THEY MAY HAVE ON THE HEALTH OF HORSES ARE STILL BEING INVESTIGATED, BUT BECAUSE THEY ARE MADE FROM HUMAN EPO THEY ARE FOREIGN PROTEINS BEING ADMINISTERED TO ANIMALS. IN OTHER WORDS, THEY DO NOT NATURALLY BELONG THERE.

ONE RESULT: “THE HORSES MAKE ANTIBODIES AGAINST THE DRUG. THERE HAVE BEEN A NUMBER OF DEATHS BECAUSE THEY HAVE BEEN GIVEN MULTIPLE DOES,” SAID DR. SOMA. “MULTIPLE DOES IN ONE ANIMAL SEEM TO BUILD UP A RESISTANCE THAT SUPPRESSES ITS OWN NATURALLY OCCURRING [EQUINE] EPO, AND PRODUCES ANTIBODIES THAT CAN BE IDENTIFIED, SO WHEN YOU TAKE IT AWAY, THE HORSE SUDDENLY CAN BECOME VERY ANEMIC AND CRASHES. THERE HAVE BEEN SOME DNA CHANGES, GENETIC CHANGES IN THE PROTEINS, SOME AMINO ACID CHANGES, ENDOGENOUS CHANGES, BUT WE HAVEN’T BEEN ABLE TO FIGURE THAT OUT COMPLETELY YET.”

ALTHOUGH LONG-TERM DELETEROUS EFFECTS OF THE ADMINISTRATION OF THE HUMAN-PROTEIN-BASED DRUGS ON HORSES ARE STILL BEING DETERMINED, THE IMMEDIATE IMPACT OF A POSITIVE BANNED-SUBSTANCE TEST ON THE WINNERS’ PURSES ARE VERY MUCH KNOWN. IN PENNSYLVANIA, BLOOD AND URINE FROM ALL FIRST-PLACE WINNERS AND HORSES RANDOMLY SELECTED AT THE COMMONWEALTH’S SIX RACETRACKS ARE DRAWN AUTOMATICALLY. THE LABORATORY ALSO RECEIVES ANONYMOUS SAMPLES FOR TESTING. IF A HORSE TESTS POSITIVE, ITS RACE VICTORY IS VOIDED, AND THE WINNING PURSE—WHICH CAN RANGE FROM $5,000 TO $500,000 OR MORE—is AWARDED TO THE NEXT FINISHER. IN ADDITION TO AFFECTING THE BOTTOM LINE, VIOLATORS CAN ALSO FACE FINES, SUSPENSION AND EVEN LICENSE REVOCATION. INEVITABLY, WITH SUCH HIGH STAKES COME INCREASINGLY SOPHISTICATED METHODS BY CHEATERS TO BEAT THE SYSTEM.

“WE CALL THEM ‘BASEMENT CHEMISTS.’ THEY ARE ADVISING THE HORSEMEN ON WHAT TO DO,” EXPLAINED DR. UBOH. “YES, IT IS A GREAT CHALLENGE FOR US TO KEEP UP WITH THE NEW DESIGNER DRUGS BEING ILLEGALLY DEVELOPED. WE ARE WORKING WITHIN THE LEGAL SYSTEM, MEANING THAT WE ARE LOOKING FOR DRUGS APPROVED FOR USE; THOSE ARE THE STANDARDS WE HAVE. WE CAN GO TO THE MARKET AND BUY THOSE, BUT THE ONES SYNTHESIZED IN BASEMENTS ARE NOT PUBLICIZED, ARE NOT OUT THERE ON THE MARKET. WE CAN’T BUY THEM. SO THAT’S A CHALLENGE WE FACE.”

THE DECLINE OF STEROIDS

BECAUSE ANABOLIC STEROIDS HAVE BECOME VERY EASY TO DETECT VIA TODAY’S TESTING PROTOCOLS, THEIR ABUSE IN HORSE RACING HAS RENDERED THEM LARGELY A THING
of the past. Anabolic and androgenic steroids, synthetic forms of the male hormone testosterone, have been used to create fitter, powerful and more aggressive horses. Corticosteroids (e.g., prednisone and dexamethasone), on the other hand, generally are used to relieve inflammation in joints and in the airways of racehorses. Equine athletes are not allowed to receive either type of steroid within 24 hours of a race (the exception is in Florida, where horses can receive the corticosteroid prednisolone on race day). The Racing Medication and Testing Consortium (RMTC), founded in 2000 and governed by a board of directors consisting of 23 racing-industry stakeholder groups (including the American Association of Equine Practitioners and the National Thoroughbred Racing Association), has developed a model rule regulating use of anabolic steroids in racehorses. To date, 24 states (including Pennsylvania, the first to go steroid free) have adopted the model rule, and nine states are in the process of doing so.

Again a pioneer, PETRL was the first laboratory in the world to develop a method of screening, quantifying and confirming the anabolic steroids in plasma. Making the switch from urine to plasma for screening and confirming the presence of anabolic steroids made it more rapid and cost effective. “Everyone was testing urine because it’s a lot easier to get a lot more urine from the horse,” said Dr. Uboh. “But if you’re really looking for the action of the drug, it’s not what is in urine; what it is in plasma matters. If it is in urine, the body is sending it out, it doesn’t want it. If it’s in plasma—in the blood—then it most likely had an effect on the horse.”

“Plasma is also cleaner,” Dr. Uboh continued. “When you look at the urine result, there are so many peaks/signals, so many other naturally occurring substances represented by the many signals observed. With plasma, it’s very clean. If a drug is present, you see one single signal. And then you tackle that signal and find an answer or identify that peak instead of wasting time on so many irrelevant peaks or signals.”

Dr. Soma believes most horsemen are glad about the ban. “I think if you talk to the average trainer now, he is happy with the ban because he says, ‘Now, it’s a level playing field. I know my neighbor. He doesn’t have a competitive edge on me because he can give an anabolic steroid and I don’t want to.’ Some trainers didn’t want to give steroids but felt forced to because they wouldn’t have had that same competitive edge.”

Aside from the unfair impact anabolic steroids had on racing, the chemicals also seemed to have negative effects on the animals’ behavior, akin to the “roid rage” that can occur in people using the substances. “That’s why they’ve been banned, finally—because they caused behavioral changes,” Dr. Soma explained. “We started looking at anabolic steroids about six years ago now. The racing commission veterinarians were saying, ‘I’ve got horses I can’t handle.’ They were having females act like males. If you give testosterone to a female, put her out in the pasture and there’s another female out there, she’s going to act like a stud. And if a gelding is given testosterone, he’s going to act like a stud.”

PETRL NEVER SLEEPS

PETRL scientists process 60,000 samples a year—equine samples for research, post-race and pre-race, as well as from human drivers and trainers and occasional “specials” (e.g., if a horse expected to win loses, and vice versa, or retesting positives from other laboratories). Each positive result helps build PETRL’s own database of specific drug “fingerprints,” which now numbers in the hundreds. Truly, Dr. Uboh and his laboratory colleagues have almost single-handedly rescued the integrity of the horseracing industry—in Pennsylvania and beyond.
“We did some screening in 2005, and 60 percent of the horses running in Pennsylvania had an anabolic steroid in them; some had two or three different anabolic steroids,” Dr. Soma remembered. In 2008, the Pennsylvania Horse Racing Commission and Pennsylvania Harness Racing Commission collected 2,061 samples during the first two months of the year 2008; results showed 98.8 percent of the samples were negative, according to the governor’s office. Currently all horses in Pennsylvania are competing anabolic-steroid–free.

“People think [horseracing] is a very dirty industry, nothing but drugs, but that’s not true,” said Dr. Uboh. “We know that only about 0.1 percent test positive. It’s a very clean industry. Very well regulated, believe me. Horses are very intensely tested. We don’t leave stones unturned. Whenever we see something, we pursue it down.”

It is only fitting that such groundbreaking work takes place in this commonwealth. “Pennsylvania has a proud history of horseracing reaching back to the earliest colonists,” said

Dr. Corinne R. Sweeney, associate dean of Penn Vet’s New Bolton Center campus and chief operating officer and executive director for the George D. Widener Hospital for Large Animals. She currently serves as chair of the Pennsylvania Horse Racing Commission.

“Pennsylvania’s horse- and harness-racing industries are the backbone of our state’s $1.5-billion equine industry,” Dr. Sweeney continued. “In 1967, the Pennsylvania Horse Racing Commission was established, and since then Penn Vet has been there, advising the commission on issues associated with generating a healthier racehorse and implementing a safer racing product.

“Because of the work of Drs. Soma and Uboh, the Pennsylvania Horse Racing Commission implemented the first ban on anabolic steroids in the country, which soon was followed by other major racing jurisdictions,” said Dr. Sweeney. “The commission continues to turn to these Penn scientists to guide us as we eliminate the future use of other drugs in the hope to reduce catastrophic and lesser racing injuries.”

Dr. Soma with Dr. Cornelius E. Uboh. Photo by Sabina Louise Pierce.
Tiny Two:
A Case Study in Laminitis

Patient:
Tiny Two

Age: Eight years
Breed: Percheron
Gender: Gelding

Staff:
James A. Orsini, DVM, DACVS
Associate Professor of Surgery
Director, Laminitis Institute

Patrick Reilly
Chief of Farrier Services

History:
> Two-week history of founder in the left front foot;
> No inciting cause identified;
> Symptomatic treatment initiated with progressive rotation of P3 in the left front foot.
> At time of admission, the right front was radiographically normal.

Presentation:
Admitted to the George D. Widener Hospital for Large Animals, New Bolton Center, on November 13, 2007.

Treatment:
Tiny Two (TT) is a fox hunter that developed severe laminitis in the left front foot. On admission to New Bolton Center, the coffin bone was severely displaced, causing the sole to bulge and nearly penetrate the foot.

A deep flexor tenotomy was performed on TT, per Dr. Orsini, and his shoes and support material were adjusted or changed frequently during the first month of hospitalization. TT was a New Bolton Center patient for more than a month.

The trauma and bruising associated with laminitis can lead to secondary complications. Included in these were abscesses that TT developed under the hoofwall of his left front foot. A hoofwall resection was performed to relieve the pressure, encourage drainage and surgically debride (clean) the focus of infection. Larval therapy, biotherapy or sterile maggots were used to remove the diseased tissue in the foot as well. Following this treatment, the hoof was stabilized using a hoofwall reconstruction procedure. This technique was developed at New Bolton Center by former farrier Rob Sigafoos and utilizes a composite of a PMMA/epoxy hybrid adhesive with carbon fiber and Kevlar added as structural materials to support the remaining hoof.

Tiny Two laminitis radiograph before (left) and after (right) treatment.

As with any laminitis case, the hoof cannot be “fixed.” The goal is to maintain the integrity of the hoof while encouraging new, healthy hoof to grow. The extent of TT’s laminitis has required more than a year of monthly visits for special shoeing and follow-up care. TT’s level of comfort continues to improve; he is off all pain medicines and is reported to be sound by TT’s owner and primary care veterinarian. TT is starting to return to low levels of work on a regular basis. The horse’s owner has been diligent in his care and a model client. Dr. Orsini and Pat Reilly remain cautiously optimistic that TT will return to his previous level of athletic performance.
Penn Vet’s Laminitis Institute and Farrier Program Are Spearheading the Fight Against Laminitis

BY JENNIFER RENCH

Penn Vet’s New Bolton Center treats world-class equine athletes of all disciplines. In spring 2006, Kentucky Derby winner Barbaro broke down in the second leg of the Triple Crown, the Preakness Stakes—and his injury and fight for life would forever change the horseracing world and veterinary medicine. Barbaro healed from his original injuries, but it was laminitis that ultimately took him from us.

Since 2006, there have been many advances in the fight against laminitis. The Laminitis Institute at Penn Vet has developed into the epicenter for collaboration with researchers from multiple disciplines from across the U.S. and from around the world. Most recently, Chris Pollitt, BVSc, Ph.D., University of Queensland, Australia, was appointed research director. Dr. Pollitt joins our existing team of experts including Dr. Jim Orsini, director of the Laminitis Institute; Dr. Hannah Gallantino-Homer, lead investigator; and a team of leading researchers and clinicians from stellar institutions throughout the world.

Today, the Institute’s three major priorities are tissue banking; investigation into the pathogenesis of the disease and trying to develop an in vitro lab model of laminitis. The key is collaboration, not only within the university, but also with other universities. These priorities are underway and are paving the way for the ultimate goal of clinical application and prevention of laminitis.

The ultimate goal of the Institute is to translate research findings into clinical applications to help manage and prevent laminitis. “Integration of the clinical care component of the Laminitis Institute with the farrier service plays an essential role in managing horses with laminitis/founder,” said Dr. Orsini. Farriers at New Bolton Center have pioneered many of the techniques and applications that are used today and are paving the future. Former Penn Vet farrier Rob Sigafoos blazed new trails in the industry, and Patrick Reilly, current chief of Farrier Services at New Bolton Center, is building on this foundation and innovating new techniques that will help manage horses with laminitis, and is collaborating with farriers worldwide to exchange ideas and innovations that translate into clinical applications.

One exciting application that is on the horizon is an In-Shoe Force Measuring System. This system has undergone extensive research both in human and veterinary medicine. It was originally developed for human podiatry, but has not been available to the equine industry for logistical reasons (nails interfere with the sensors, and boots do not provide adequate stability). Pat Reilly and Rob Sigafoos have modified the system for application in horses. “Incorporating the Sigafoos Shoe has provided excellent data, and we are in the process of collecting data to validate this protocol. The system collects data regarding hoof impact, hoof loading and breakover,” according to Mr. Reilly. It offers promise in providing answers for many of the mechanical questions debated among veterinarians, farriers, trainers and horse owners. Potential applications of this system include:

- Assessment of hoof balance
- Comparison of various horseshoe types
- Comparison of hoof pads
- Assessing the effect of various surfaces (footings)
- Evaluation of foot problems during working conditions
- Evaluation of “normal” foot functions (i.e., how often does a horse shift weight?)
- Evaluation of surgical techniques
- Evaluation of casting and splinting techniques

Drs. Chris Pollitt, Hannah Gallantino-Homer and Jim Orsini.
Dr. Frederick A. Murphy
Selected 2009 Penn Vet World Award Recipient

“Y ou must never forget where you came from.” These words are at the heart of the long and successful career of noted virologist Dr. Frederick A. Murphy, who was selected as the 2009 recipient of the Penn Vet World Leadership Award. Dr. Murphy is the James W. McLaughlin Professor in Residence, Department of Pathology at the University of Texas Medical Branch (UTMB) at Galveston.

The timing of the $100,000 award could not have been better. In September 2008, Hurricane Ike devastated the island city of Galveston, Tx. “It seems that human nature is such that people who do not see the remaining damage every day tend to forget about it,” said Dr. Murphy. “But, as with Katrina, recovery is a long-term matter.”

Dr. Murphy had left for a meeting in Washington, D.C., when the evacuation order was issued before the hurricane struck. “I came back as soon as it was possible—that was when reality set in. The media did not really capture the true level of destruction and human tragedy,” he said. “My condo was fine, but many friends suffered substantial damage to their homes. Worse off were the poorest people in town, those living in older, lower houses, many of which were destroyed.

“The university suffered great loss, too—an estimated $710M—resulting in layoffs of hospital staff. We are rebuilding UTMB, but there is a long way to go. One bright spot was the Galveston National Lab, which had been dedicated a few weeks before the hurricane hit. It is the first academic large maximum containment lab in the country—it suffered no damage and rapid progress is being made in occupying it and starting up its emerging disease and biodefense research programs.”

Dr. Murphy plans to contribute some of the prize money toward Galveston’s recovery. “My beloved wife, Irene, who died in 2000, taught me to focus on the most needful among us, and now I will do more in this regard. Also, I had been wondering where I could find some money to support my habit, my seemingly never-ending professional life—now I will not have to wonder,” he said. Dr. Murphy has been working on a history project called The Foundations of Medical and Veterinary Virology: Discoverers and Discoveries, Inventors and Inventions, Developers and Technology. Available on the Web at www.utmb.edu/thui/virusimages/index.shtml, the project, now better funded, will be used for teaching.

Dr. Murphy’s greatest impact on the future of the veterinary profession is his expertise in the field of infectious disease; in particular, he has played a leadership role in viral pathogenesis and has articulated clearly the role of animal pathogens in new and emerging diseases. “As an internationally acclaimed authority in comparative virology, Dr. Murphy is a pioneering researcher, respected advisor in health policy and outstanding spokesperson for the veterinary profession, which has led to his unparalleled contributions to veterinary medicine,” said Dr. Joan C. Hendricks, the Gilbert S. Kahn Dean of Veterinary Medicine. “We are proud to recognize his vast and impressive achievements with this year’s Penn Vet World Leadership Award.”

The Penn Vet World Leadership Award is given annually to a veterinarian who has dramatically changed the practice and image of the profession and substantially influenced the lives and careers of others. The award provides the recipient with $100,000 in unrestricted funding, the largest monetary award in veterinary medicine, underwritten by the Vernon and Shirley Hill Foundation.

“Shirley and I are pleased to support the prestigious Penn Vet World Leadership Award, which recognizes the outstanding individuals whose achievements have significantly advanced both the veterinary profession and humanity,” said Vernon Hill. “Dr. Murphy truly exemplifies excellence in the critical global health arena. We are honored to underwrite this award to help advance Dr. Murphy’s important research.”

Dr. Murphy has made significant contributions that benefit society and advance the veterinary profession through his research work on viruses impacting animals and humans; highlighting the critical importance of new and emerging diseases of animal origin as the major cause of these new illnesses; leadership at national and international levels, publications, speaking engagements around the world; and mentoring and teaching of young scholars.

“I share this honor with my family; everything that has been good in my life is grounded in my family life,” he said. “My four sons, my four daughters-in-law and my five grandchildren are the joy of my life.

“I would also like everyone to know how proud I am of the veterinary medical profession and the veterinarians I have known around the country and around the world. They are the salt of the earth. In thinking of all my colleagues in academic veterinary medicine, public health, international health and comparative medicine, I feel that my colleagues are serving the public interest very well, indeed—serving the needs of animal health, human health and environmental/ecological health. I am lucky to be living my life among these men and women,” he said.
Penn Vet Students Awarded $100,000 as 2009 Student Inspiration Award Winners

Catherine Brinkley

Catherine Brinkley, of La Crosse, WI, is a second-year student at Penn Vet and is enrolled in the school’s VMD-PhD program. Her winning project was entitled “Design for Health.” Her plan blends veterinary medicine with city planning to create a unified and cross-disciplinary approach to animal care and urban life. “I am honored and beyond thrilled to be chosen for the Inspiration Award,” she said. “The prospect of bringing Design for Health to life has been a dream for the past five years for me, and I am greatly indebted to the Hills and Penn Vet for giving me the chance to make it happen.” Ms. Brinkley also has been accepted into the Urban Planning PhD Program at Penn to pursue the study of “Design for Health: Planning Animal Facilities to Prevent Infectious Disease Spread.”

Alison Barnstable & Laurel Redding

Alison Barnstable, of Narbeth, PA, and Laurel Redding, of Philadelphia, two second-year students at Penn Vet, won with a project entitled “Increasing Agricultural Productivity in Developing Countries.” “I am so excited to receive this award, as it creates an opportunity for me to join the global health community, addressing the issues of health, poverty and hunger,” said Ms. Barnstable. “This award will allow us to create a sustainable veterinary involvement in global health through collaboration with Heifer International. I hope this work will benefit veterinary students, animal health providers here and abroad and developing communities. I cannot thank Mr. and Mrs. Hill enough for their generosity.”

Their project involves a partnership with Heifer International, a non-profit organization dedicated to helping people produce their own food, with a program that encourages the development of para-professional veterinary services to ensure the productivity of donated animals. They also plan to create opportunities for veterinary student volunteerism and research and increase the flow of information concerning the needs of developing countries into veterinary schools in the U.S. “I am truly honored and thrilled to have received this award,” said Ms. Redding, who is enrolled in Penn Vet’s VMD-PhD program. “The Inspiration Awards are a once-in-a-lifetime opportunity for us to make a contribution to veterinary medicine as students. I am very excited about launching this project and undertaking a meaningful collaboration with Heifer International in the field of global public health.”

“The purpose of the Inspiration Awards are to recognize and reward students who have shown excellence in their academic pursuits and commitment to the veterinary profession,” said Dean Joan C. Hendricks. “The level of talent and commitment exemplified by these Student Inspiration Award winners is truly amazing. I am confident they are on the right track for changing the world.”
As it has been every year for over a century, this year’s 109th Penn Annual Conference was a chance for Penn Vet colleagues and alumni to come together to share ideas and to learn and help shape veterinary best practices. Overheard at the 2009 conference, though, were some probing new questions urgently needing answers: Sweet cream or caramel swirl? One scoop or two? This year, the school served up something different and distinctly Penn Vet: ice cream made from the milk of cows housed at the Marshak Dairy at the school’s New Bolton Center campus in Chester County, Pa.

Built in 1996, the greenhouse-style Marshak Dairy is considered one of the world’s most innovative. Natural lighting and excellent ventilation within the barn create a healthy environment for the animals. **Dr. Robert Marshak**, Penn Vet’s ninth dean and the dairy’s namesake, was instrumental in establishing the farm. Not only home to a Holstein herd of nearly 400 cows producing 1,500 gallons of milk a day, the dairy is a working laboratory for students learning about cow healthcare, preventive medicine, nutrition and food safety. In addition to veterinary students, high school, college and veterinary-technician students spend time at the dairy in various capacities. The Marshak Dairy is also an ideal setting for research trials; projects largely have focused on nutrition, environmental sustainability, mastitis and cow comfort. Further, the group interacts with the Dairy Task Force of Pennsylvania and has several research projects involving production efficiency and environmental issues.

All the hands-on education and research couldn’t come at a better time. Today’s global economy has increased demand for dairy products in booming markets like China and India. In addition, drought in Australia and New Zealand has hurt exports in those countries. Hence, meeting the heightened secondary dairy needs for corn, wheat, fuel and packaging—much of which is petroleum based—in ecologically friendly ways has become yet another important part of today’s dairy education.

“The dairy industry faces many complex challenges as we strive to meet the increasing global demand for dairy products in a manner that is environmentally sustainable,” says **Dr. David T. Galligan**, V’81, W’86, professor of animal health economics and director of the Center for Animal Health and Productivity. “Our work is to develop tools in multiple dimensions that can help the industry meet these objectives.”

Dairy program students are taught to be flexible so that they can meet the immediate needs of a herd as well as responsibilities of the dynamic industry at large. The program is designed to be a solid foundation of problem-solving skills to meet current and future problems. To achieve this goal, Penn Vet has assembled a diverse and enthusiastic group of faculty with interests in nutrition, reproduction, lactation performance, milking management, production statistics, economics, epidemiology, production record analysis and environmental impact, as well as the more traditional disciplines of internal medicine and surgery. An eight-week dairy production medicine course—taught by instructors from Field Service and the Section of Animal Production Systems in the Center for Animal Health and Productivity—offers intensive problem-solving at the herd level. Other electives, as well as independent studies in nutrition, record analysis, economics and application of Microsoft Excel in production medicine, allow interested dairy students to focus their experience at Penn.

To learn more about the Marshak Dairy and the dairy education program, visit [www.vet.upenn.edu/NewBoltonCampus/Facilities/MarshakDairy/tabid/835/Default.aspx](http://www.vet.upenn.edu/NewBoltonCampus/Facilities/MarshakDairy/tabid/835/Default.aspx). For more information about the Center for Animal Health and Productivity, please visit the Web at [research.vet.upenn.edu/cahp](http://research.vet.upenn.edu/cahp).
Growth Factor Identified That Stimulates Sperm Stem Cells to Thrive

Researchers at Penn Vet and Penn State identified a specific “niche factor” in mouse testes called colony stimulating factor 1 (Csf1) that has a direct effect on sperm stem cell self-renewal. The study also shows that the origin of this growth factor is the Leydig cell—located in the testes and stimulated by the pituitary gland to supply testosterone—that secretes Csf1 and enhances self-renewal of stem cells. The finding shows that stem cells are influenced to increase divisions by this growth factor, which provides a powerful new model in the study of stem cells and shows they interact with their micro-environment (“niche”). Future studies can now be performed in a stem cell niche system that provides a quantitative functional end point for assessment.

The joint study involved Drs. Ralph Brinster, V’60, GR’64, HOM’66, Richard King Mellon Professor of Reproductive Physiology; Mary R. Avarbock of the Department of Animal Biology; Jon M. Oatley; Melissa J. Oatley; and John W. Tobias of the Penn Bioinformatics Core. The research, published on-line in Development, was supported by the National Institute of Child Health and Human Development of the National Institutes of Health, as well as the Robert J. Kleberg Jr. and Helen C. Kleberg Foundation, with additional funding from Penn State.

Brain Structure Assists in Immune Response

Penn Vet researchers have imaged in real time the body’s immune response to a parasitic infection in the brain. The findings, published in Immunity, provide insights into how immune cells are regulated in the brain and have implications for treating inflammatory conditions that affect the brain.

Toxoplasma, a common parasite of humans, is found in the brains of approximately 30 percent of the population. Yet, because the brain lacks its own lymphatic system for localized immune response and the blood–brain barrier limits antibody entry, researchers have found it provides unique challenges for the immune system to control local infection. Therefore, little is known about the processes by which T-cells access the central nervous system during toxoplasma infection or how the immune system keeps this parasite in check.

The study was supported by a grant from the National Institutes of Health and the Commonwealth of Pennsylvania. Penn Vet researchers involved in the study were Drs. Tajie H. Harris, Beena John, Elia Tait, Marion Pepper and Christopher A. Hunter, professor and chair of the Department of Pathobiology.

Living with Females Extends Reproductive Life of Male Mouse

Living with a female mouse can extend the reproductive life of a male mouse by as much as 20 percent, according to a study by Dr. Ralph Brinster, V’60, GR’64, HOM’66, Richard King Mellon Professor of Reproductive Physiology, and colleagues at Penn State. The researchers hypothesize that the female’s effect on the environment of the spermatogonial stem cells likely occurs through the male’s endocrine and nervous systems, but other systems are likely involved. The change amounts to a reduction of fertility six months earlier in “lonely” mice as opposed to those who have female companionship. The results have significant implications for the maintenance of male fertility in wildlife, livestock and even human populations. The study appears on-line in Biology of Reproduction.

This research continues 10 years of study on the relationship between the stem cell environment (“niche”) and spermatogonial stem cells (SSCs). Dr. Brinster’s team first discovered that the niche in the testis of the newborn male mouse supports the stem cell and its differentiation to produce complete spermatogenesis better than the niche in the mature adult male testis. In subsequent studies, Dr. Brinster determined that when the SSCs of young males were transferred into new young testes every three months, the SSCs survived for more than three years, a greater than 50 percent increase in life of the stem cell. Therefore, in old males the SSC niche in the testis failed long before the SSC, which was relatively long-lived.

The research was supported by the National Institutes of Health and the Robert J. Kleberg Jr. and Helen C. Kleberg Foundation.
More than 100 dogs and cats in the Philadelphia area received vaccinations and physical exams as Penn Vet launched its first-ever vaccination clinic in conjunction with Martin Luther King Day of Service activities in the city.

“We are pleased we could provide a much-needed service in underserved communities while helping limit the spread of infectious disease,” said organizer Dr. David Holt, chief of surgery at Penn’s Matthew J. Ryan Veterinary Hospital. Dogs as large as Saint Bernards and as small as papillons waited patiently for their turn in the hospital’s lobby. Some people brought more than one pet, and no one was turned away.

More than 50 volunteers, including faculty, staff and students, as well as local veterinarians were on hand to assist with the event. Local media, including KYW and WCAU, promoted the clinic, and many people came after seeing the event posted on-line on such Web sites as Craigslist, Philadelphia City Paper and Philly Freecycle.

The vaccination/wellness clinic will help decrease the incidence of several preventable infectious diseases, including rabies, in the pet animal population. Several cases of rabies have been reported in the greater Philadelphia area in the last few years. Rabies is transmissible to people and an important public health concern. The clinic will raise the community’s awareness of the importance of appropriate veterinary care and promote the importance of animals in society.

Alumni and other volunteers (above) at the vaccination clinic included:

- Davis Diehl, V’83
- Diane Eigner, V’80
- Julianne Grady, V’96
- Hillary Israeli, V’00
- Elizabeth Knighton, V’00
- Michael Moyer, V’90
- Laura Tremi, V’94, GR’08
- Jackie Martin, V’96
- Carrie McCloskey, DVM
“As my husband says, most people go to the islands of the Turks and Caicos and bring back conch shells as souvenirs,” said Julie Williamson. “We bring back dogs.”

And not just any kind of dog; Julie, an attorney from Moorestown, N.J., has brought back two “potcake” dogs, named for dogs fed whatever is left “caked in the pot.”

Potcakes are found on the islands of the Turks and Caicos, where the feral dog population is growing; tourists and locals alike have been known to find entire litters without homes. Three years ago, Julie and her family adopted nine-week old Turq. A bright and active puppy, he was so used to his island home that he was tentative and frightened when placed on the carpet in the Williamsons’ home. Strangers scared him, as did other dogs. His owners sought help from trainers who used aversive training methods, with poor results, and so turned to the Behavior Clinic at the Matthew J. Ryan Veterinary Hospital.

“Turq presented to me two years ago for aggression to unfamiliar people and dogs, both inside his home and on leash walks,” said Dr. Meghan Herron, behavior resident. “At his initial visit, his level of fear was higher than most patients I see here. It was clear the motivation for his behavior was pure terror of new people and most dogs.”

His owners had attempted various interventions to change this behavior, from harsh verbal reprimands and leash corrections to growling at him. “Nothing seemed to be working and Turq was becoming fearful even of his owners,” said Dr. Herron. “I gave the Williamsons a plan to reduce Turq’s fearful behavior and to teach him new behavioral responses to the approach of strangers and dogs.”

The Williamsons learned how to “read” their dog, and they built trust by not putting him in stressful situations he could not handle. “I’m afraid that some of his fears today are from those techniques we tried when he was younger,” said Julie. “Dr. Herron brought a new world to Turq—one that includes positive trust-building between dog and humans.”

Effective training is critical in cases like Turq’s. Dr. Herron is the lead author of a new, year-long survey of dog owners who use confrontational or aversive methods to train aggressive pets; she and her fellow researchers found that most of these animals will continue to be aggressive unless training techniques are modified. The study, published in the February issue of Applied Animal Behavior Science, also showed that using non-aversive or neutral training methods such as additional exercise or rewards elicited very few aggressive responses.

“Nationwide, the number-one reason dog owners take their pets to a veterinary behaviorist is to manage aggressive behavior,” said Dr. Herron. “Our study demonstrated that many confrontational training methods, whether staring down dogs, striking them or intimidating them with physical manipulation does little to correct improper behavior and can elicit aggressive responses.”

The Williamsons participated in the study and have since changed their approach to training. “Although Turq will always be a somewhat fearful dog and will always need to be introduced to new people in a special fashion, his behaviors are now easily managed by his family and their leash walks are safe and enjoyable,” said Dr. Herron.

“Turq is an intelligent dog, but sometimes he has a misguided sense of danger. Our job is to channel his stress properly and respect his boundaries. I think of him as a work in progress,” said Julie. “There are still situations that he is not comfortable in, but the difference is that we can tell from his body language how he is feeling and we can act accordingly.”

Turq was recently joined by Ben, another potcake dog from the islands. “I don’t think we’ll be adopting any more potcake dogs, though,” said Julie. “Now that I think about it, my husband hasn’t taken me back to the islands since we got Ben.”

For more information on “potcake dogs,” please visit www.potcakeplace.com.
More than 150 people gathered between March 19 and 21, 2009, to celebrate the Penn Vet Student Research Day and the VMD-PhD 40th Anniversary Alumni Reunion Symposium. Fifty percent of VMD-PhD alumni returned—along with the four previous and current program directors and all 28 current VMD-PhD students—for a celebration that included alumni talks, poster presentations, Phi Zeta inductions, panel discussions and parties.

Dr. Ralph Brinster, V’60, GR’64, HOM’66, Richard King Mellon Professor of Reproductive Physiology, who founded the VMD-PhD Program in 1969, opened the symposium with comments about the pioneering days of the program in which a high-caliber program was envisioned with high standards to train veterinarian-scientists for careers in biomedical research. The program developed close ties with the MD-PhD Program at Penn’s School of Medicine, and 40 years later those ties persist. The Reunion Symposium was punctuated with comments by past directors Drs. Richard R. Miselis, GR’73, V’73, and John Hall Wolfe, V’82, GR’86, director of the Walter Flato Goodman Center for Comparative Medical Genetics, and myself. Returning alumni gave academic talks on neurosciences, regenerative medicine, cancer biology and infectious disease research, in line with the initiatives identified by the school as key areas of excellence. The symposium included an informal breakfast with Dr. Joan C. Hendricks, V’79, GR’80, the Gilbert S. Kahn Dean of Veterinary Medicine, and two fabulous parties at the Inn at Penn and World Café Live. By all measures, the symposium was a fantastic success.

The Past Informs the Future

Over its 40-year history the VMD-PhD Program has remained true to its original mission as defined by Dr. Brinster: to train outstanding veterinarian-scientists who would be leaders in biomedical research, education and clinical medicine. To date the program has generated 54 VMD-PhD alumni, 85 to 90 percent of whom are in careers involving biomedical research. Penn’s VMD-PhD alumni are an
accomplished crew, with more than one-third in top positions of dean, chair, head, director, president or CEO. The seven VMD-PhD alumni on Penn’s faculty have produced more than 500 publications, have garnered more than $50 million in external grant support and hold numerous leadership positions within the school. With 28 students currently in the program, it is clear that the number of alumni will dramatically increase in the future. I envision a program with 40 to 50 students, and research disciplines to expand beyond the traditional biomedical graduate groups. All this requires an expanded applicant pool and numerous sources of additional funds—and both these requirements are now being realized.

The Path to the Future

In 2001, assisted by program coordinator, Michelle Darrah, I initiated a vigorous advertising campaign to recruit new students into the program, to educate the public about the roles of veterinarian-scientists in research and to inform academic advisors and faculty about the opportunities for VMD-PhD training at Penn and the advantages of being a veterinarian-scientist. The results have been impressive, with a 700-percent increase in applicant pool, including a strong number of under-represented minority applicants. I look for a further doubling of the applicant pool in the future to supply a talented pool of high-caliber students for VMD-PhD studies.

Along with the increased applicant pool, student enrollment has nearly tripled, requiring additional funding sources. The program has garnered more support from the National Institutes of Health, the Armour-Lewis Foundation and Pfizer Animal Health, along with substantial investments by the Office of the Dean. The program is now poised to begin an ambitious campaign to raise additional funding, including an endowment for VMD-PhD training and a scholarship fund specifically for students from under-represented minority and disadvantaged backgrounds. The groundwork for these initiatives has been laid, and numerous opportunities for investing into the program have been developed.

The Present as Springboard

The future of the VMD-PhD Program would be impossible without the highly talented and successful students currently in the program. These students perform PhD studies in more than a dozen graduate groups and subgroups within the university and publish their research in high-tier journals. Current VMD-PhD students represent Penn at numerous scientific conferences and national agencies and continually look for new ways to develop and expand the careers of veterinarian-scientists. Recruitment of new students into the program is easy when visiting applicants observe the excellence of our student body, the cohesiveness of our program and the community of students in the program. Our current students are the best recruiting tool, and during the past eight years; we have only lost three students to other institutions. I believe fun is important too, and students currently enjoy a summer BBQ party, a dinner party at my home in December and many less formal gatherings. With the right students in the program, an expanding applicant pool, the ability to garner additional funds, a well-designed curriculum, a track record of producing outstanding alumni and some fun parties to boot, the VMD-PhD Program is poised to expand to new levels and to explore new frontiers in what it means to be a veterinarian-scientist. The future looks very bright.
Following a Penn Vet tradition, Gwen Fernich Lowitt, V’94, received her veterinary degree from her father, Fred Fernich, V’63.

Tragically, Dr. Lowitt’s career and life were cut short by a rare form of cancer she struggled with for 11 years; she lost her fight on May 6, 2007, at the age of 39. Early in her career, Dr. Lowitt completed an internship at Oradell Animal Hospital in Oradell, NJ, and then served as a staff doctor at Oradell for seven years. After her illness made it impossible for her to work full time, she practiced part time as a relief veterinarian at various animal hospitals in New York City, including Abingdon Square, Gramercy Park and Heart of Chelsea.

To recognize his wife’s love of learning and animals—and her contributions to veterinary medicine—Gary Lowitt, C’87—along with Gwen’s parents Dr. and Mrs. Fernich—established the Gwen Fernich Lowitt, V’94, Memorial Endowed Opportunity Scholarship.

“Gwen loved being a vet, and continuing to work as much as possible, even as she became sicker and sicker, helped her to feel ‘normal.’ She was a remarkable person, in every respect, who touched everyone fortunate enough to know her,” Gary said. “I wanted to do something to honor Gwen’s memory, and knew it should involve Penn Vet. She was so humble and selfless, she would never have wanted a plaque with her name attached to a classroom or a piece of equipment; that just wasn’t her. Gwen valued education and always looked to expand her knowledge of veterinary medicine and to mentor younger vets to become better doctors. Funding this scholarship for veterinary students is the perfect way to keep alive her true generosity of spirit.”

Gary currently is vice president of acquisitions and dispositions at Ginsburg Development Companies, a privately owned residential developer based in Westchester, NY. He lives on Manhattan’s Upper East Side with three cats: Desmond, a Russian blue; Wesley, a flame-point Siamese; and Zelda, a sphinx.

CALL FOR NOMINATIONS

ALUMNI AWARDS of MERIT

Your alumni board is seeking nominations for the 2009 Alumni Award of Merit for distinguished Penn Vet Alumni.

To be presented at the Penn Annual Conference in March 2010, these awards are given to alumni stars and recognize distinguished graduates for their contributions that advance knowledge in biomedicine, promote the welfare of animals through public education of animal owners and benefit society through civic activities that foster the advancement of the profession and the School’s good name.

The Veterinary Medical Alumni Society Executive Board is seeking candidates from 2009 reunion classes (classes ending in ‘4 or ’9).

Please forward your anonymous or signed nominations to Coreen M. Haggerty, director of alumni relations, at 215.898.1481 or haggertc@vet.upenn.edu.
Name: Dirk Vanderwall, DVM, PhD, DACT

Birthplace: Upstate New York

Position: Dr. Vanderwall has recently joined Penn Vet as chief of the Section of Reproduction and director of the Georgia and Philip Hofmann Research Center for Animal Reproduction at New Bolton Center.

Research interests:
> Oxytocin hormonal treatment to block heat behavior in mares
> Aged mare oocyte quality

Beginnings: Dr. Vanderwall grew up in upstate New York and worked on a dairy farm while in high school. After high school, he pursued an associate’s degree from the State University of New York and a baccalaureate degree with distinction from Cornell University in Ithaca, NY. While pursuing studies at Cornell, Dr. Vanderwall met Dr. Gordon Woods, a leading reproduction specialist, who would become his mentor and colleague for many years.

Education and Training: Dr. Vanderwall continued studies at Cornell and earned his doctor of veterinary medicine degree in 1986. After graduation, he worked at one of the nation’s largest Standardbred horse farms—still maintaining ties with Dr. Woods—at the University of Idaho. Shortly thereafter, Dr. Vanderwall pursued graduate studies at the University of Idaho and earned a doctoral degree in animal physiology in 1992. Further postdoctoral studies brought him to the University of Kentucky for two years. From 1994 to 1999, he was assistant professor and clinical specialist focused on equine reproduction at Colorado State University before joining the Idaho faculty in 1999 as assistant professor in the Department of Animal and Veterinary Science.

Earning Distinction: The University of Idaho would remain home to Dr. Vanderwall for the next ten years while his career in reproduction continued to flourish. Dr. Vanderwall was recognized in 2005 by the American College of Theriogenologists as the world’s top veterinarian specializing in animal reproduction. That honor followed his success in producing three mule clones in 2003 on a team that also included Dr. Woods and Dr. Ken White of Utah State University.

Recent Publications:


Dr. Gustavo D. Aguirre, C’66, V’68, GR’75, professor of medical genetics and ophthalmology, has been named a Distinguished Fellow by the Association for Research in Vision and Ophthalmology. Dr. Aguirre’s research focuses on identifying the genetic causes of inherited blindness and the mechanisms linking mutation to disease, and developing treatments.

At the American Veterinary Medical Association meeting in July 2008, Eleanor M. Boyd, RHIT, senior associate for medical records, was elected to a two-year term as secretary of the American Veterinary Health Information Management Association.

Drs. Evita Busschers, lecturer in large animal surgery, and Steven T. Zedler, V’04, were certified as veterinary surgery specialists by the American College of Veterinary Surgeons (ACVS). There are 1,403 ACVS board-certified veterinary surgeons.

Dr. Margret L. Casal, GR’99, has been promoted to associate professor of medical genetics. The promotion is effective July 1, 2009.

Barbara Cavanaugh, head of the veterinary libraries, was promoted to director of the Biomedical Library and associate director of the Health Sciences Libraries, effective April 2009. Ms. Cavanaugh has been at Penn Vet since 2001 and played a pivotal role in the planning and development of the school’s Steven W. Atwood Library & Information Commons in the Hill Pavilion.

In March 2009, Dr. Roberta Di Terlizzi joined Penn Vet as clinical pathologist. Dr. Di Terlizzi, who finished her residency training at Kansas State University in 2007, comes from Iowa State University, where she was a lecturer.

Dr. Peter Dodson, professor of anatomy, was invited by the College of Charleston, South Carolina to be a “Darwin Week” speaker in February 2009. In February he also spoke at “Dinopaloosa” at the Academy of Natural Sciences in Philadelphia and at the “Darwin Evolution Teach-In” at the University of Pennsylvania Museum for Archaeology and Anthropology.

Dr. Zhengxia Dou, associate professor of agricultural systems, received a Penn Hewlett Award (one of four awards university-wide), which he is using to take 12 Penn Vet students to China this summer. The students will learn about Chinese dairy industry (nutrition, management, environmental issues, and so forth). Also involved in the project are Drs. James D. Ferguson, section chief of Nutrition and Animal Health Economics and professor of clinical nutrition; David T. Galligan, C’76, V’81, WG’85, HOM’91, professor of animal health economics and director of Center for Animal Health and Productivity; Alan M. Kelly, emeritus dean; and Charles F. Ramberg, V’64, GV’65.

Dr. Dou also was awarded a grant from the National Fish and Wildlife Foundation for working with dairy farms in the Chesapeake Bay watershed to enhance productivity and reduce environmental footprint. Also involved in the project are Drs. James D. Ferguson, V’81, HOM’95, GR’10, David T. Galligan, Charles F. Ramberg, Robert J. Munson, V’73, Linda Baker, V’84, G’93; and Zhiguo Wu.

Dr. Kenneth Drobatz, professor and section chief of Critical Care and director of Emergency Services at the Ryan Veterinary Hospital, was named associate chair of the Department of Clinical Studies–Philadelphia. Dr. Drobatz also serves as associate chair for education of the Department of Clinical Studies–Philadelphia.

Karen Gries, CVT, director of nurse recruitment, accepted the position of wards nursing supervisor at the Ryan Veterinary Hospital.

Dr. Christopher Hunter, professor and chair of the Department of Pathobiology, was elected a member of the American Academy of Microbiology. Dr. Hunter was also appointed to the Editorial Board of the *Journal of Experimental Medicine*.

Dr. Brett A. Kaufman joined Penn Vet in January 2009 as assistant professor of biochemistry. Dr. Kaufman previously worked in the Department of Physics at McGill University in Montreal, Canada. He earned a PhD in cell and molecular biology from the University of Texas Southwestern Medical Center in 2003.

Dr. Kathryn E. Michel, associate professor of nutrition and president of the Board of Regents of the American College of Veterinary Nutrition, will become chair of the board in June 2009.
Dr. Ariel Mosenco, staff veterinarian, was appointed medical director for the Ryan Veterinary Hospital wards. He will assist in developing new policies and procedures as well as fostering relationships between staff, clinicians and students.

In June 2008 Dr. Denys V. Volgin, research assistant professor of physiology, was awarded the Childhood Sleep Disorders and Development Section Investigator Award from the American Academy of Sleep Medicine. His submitted abstract was “Perinatal Alcohol Exposure Leads to Long-Lasting Overexpression of GABA(A) Receptors in the Rat Posterior Hypothalamus and Increases Behavioral Sensitivity to Gaboxadol.”

Dr. David K. Detweiler, C’41, V’42, G’49, professor emeritus of physiology and animal biology, died from esophageal cancer February 15 at 89. See p. 23 for more details.

Dr. Charles F. Reid, professor emeritus of radiology and a founder of the American College of Veterinary Radiologists, died February 12 at 75. See p. 23 for more details.

Dr. Paul Rothaug, a surgery resident at New Bolton Center from 1995 to 1998, died April 2, 2009, after suffering a return and spread of a malignant melanoma. After his residency, Dr. Rothaug joined a practice near Columbus, Ohio, concentrating mostly on Standardbred horses.

Dr. Leon Z. Saunders, former adjunct professor of pathology in the Department of Pathobiology, died of Alzheimer’s disease in March 2009. Dr. Saunders also served as director of the Pathology and Toxicology Department of Smith Kline & French Laboratories, now GlaxoSmithKline. He received Penn Vet’s prestigious Centennial Medal when he retired in 1984. He was past president of the American College of Veterinary Pathologists and the World Federation of Veterinary Pathologists. In 2000 Dr. Saunders was awarded the lifetime achievement commendation from the American Veterinary Medical History Society.

Dr. Gerhard Adam “Gerry” Schad, professor of parasitology in the Department of Pathobiology, died after a long battle with cancer on April 25, 2009. Dr. Schad gained worldwide recognition as an authority on the population biology of helminth parasites and their behavioral neurobiology, and made significant discoveries about the epidemiology of hookworm, a major tropical disease. In the last 10 years of his work, Dr. Schad focused his research on the sensory biology of parasites that may help better control parasites in the future. Of his many awards and accolades, Dr. Schad was most proud of the American Society of Parasitologists’ Clark Read Mentor Award in recognition of his leading role in training young scientists.

Do you have a child or grandchild in high school?
Is your child or grandchild considering Penn?

The Alumni Council on Admissions at the University of Pennsylvania is an advising resource for navigating the college search and application process.

ARE YOU VISITING THE PENN CAMPUS? Attend an Admissions Information Session and take a Campus Tour—www.admissions.upenn.edu. Visit the ACA for a Legacy Advising Session- Monday through Friday at 12:15 PM and 3:15 PM in the Sweeten Alumni House, 3533 Locust Walk. Additional sessions are available during Alumni Weekend and Homecoming.

ACA ADVICE is most helpful before submitting the application! What math class should I take junior year? What activities does Wharton look for in an applicant? How many proofreaders should review my essays? What is the advantage for a legacy to apply during Early Decision? How can I learn more about research opportunities at Penn?

VISIT OUR WEBSITE: www.alumni.upenn.edu/aca Browse our FAQs and advice on numerous topics: academic preparation; early decision vs. regular decision; getting to know Penn; tips for the campus visit; a guide to Penn resources and much more!

LINKING LEGACIES: Legacies may sign up for a Penn student “email buddy” to get a current Penn perspective. Linking Legacies is open to high school juniors and seniors who are interested in learning more about Penn. www.alumni.upenn.edu/linkinglegacies

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Dr. David Detweiler, C’41, V’42, G’49

Sadly for me, Dr. Detweiler retired while I was a veterinary student, however I have benefited beyond words by the section and specialty he fathered. Approximately six years ago, he contacted me requesting that I read some studies for him while he was unavailable. The breadth of his knowledge in toxicology was stunning and the experience was truly enlightening. During this period I was fortunate to have gotten to know him a bit better. He was truly a renaissance man; his abilities in the sciences were mirrored in the arts. I was amazed to learn he could speak six languages, although he humbly told me he was not fluent in ALL of them. To achieve a fraction of his sagacity would be success indeed.

— Meg Sleeper, V’93, chief, Section of Cardiology

Dr. David K. Detweiler C’41, V’42, GR’49, professor emeritus of physiology and animal biology, died from esophageal cancer February 15 at the age of 89.

Dr. Detweiler, recognized as a world leader in comparative cardiology, received his VMD degree in 1942. He immediately joined the faculty as an assistant instructor in physiology and pharmacology. In 1944 he acted as head of physiology and pharmacology until 1947. During these early years in his career Dr. Detweiler carried a heavy teaching load but nevertheless found time to begin to collect a series of electrocardiograms from dogs in the clinic. This was the beginning of work which would develop into a life-long career in cardiology.

Dr. Detweiler was one of the first of the “new breed” of faculty who appeared in the late 1940s and 1950s and who, despite heavy teaching loads, made the necessary sacrifices to develop major areas of research. In his early career he often worked under make-shift conditions and with little financial support. In the 1950s he was able to obtain some small grants from the National Institutes of Health (NIH) for epidemiological studies on heart disease in dogs. In 1960 he was awarded a one-million-dollar grant from NIH for a 10-year period to establish and support the Comparative Cardiovascular Studies Unit (CCSU). At the time this was the largest grant ever awarded to an individual at Penn Vet. The creation of the CCSU established this school as the world center for comparative cardiovascular research, a position which it still holds today. The CCSU has provided training to numerous individuals in the field of comparative cardiovascular medicine.

Dr. Detweiler’s contributions to Penn Vet go far beyond his specific teaching and research activities. His early work came at a time when the school needed to establish a research reputation; his work also helped draw other outstanding individuals to the school and to stimulate his own colleagues to engage in research. The reputation of the school was greatly enhanced within the university, and in the veterinary and medical professions on a world-wide basis.

Dr. Detweiler is survived by his wife, Birthe; children, Ellyn Mendham, Diane Heller, David Detweiler, Jodi Naessig, Inge Detweiler, Kenneth Detweiler; stepchildren, Julie Sheehy, Henrik Ersbak, Claus Ersbak, Kenneth Ersbak; 18 grandchildren; 11 great grandchildren; and two nieces.

Acknowledged by both his friends in the horse world and colleagues in the veterinary profession as the “father of equine radiology,” his opinion was sought worldwide because of his clinical approach to equine radiographic interpretation. His yearly “consulting session” at the AAEP Annual Convention developed into the famed Radiology Panels of the 1970s, during which Dr. Reid’s affectionate and humorous jousting with the panelists kept the lecture rooms filled to overflowing with veterinarians grateful for his insight and entertained by his wit.

Dr. Reid is survived by his brother, Richard; his sons, Todd and Tom; three grandchildren; and his companion, Kathleen Crompton.

Dr. Charles F. Reid

Dr. Reid was a mentor to me from the time I arrived at Penn Vet till the end of his life. During his bout with cancer, I substituted for him in radiology at NBC, reading films in the early morning before clinic hours and taking the films I was unsure of to the hospital for him to review. When he was back in the hospital with cardiac problems, I did the same and was the last visitor he had before he had his coronary and quadruple bypass surgery. He told everyone he introduced me to from then on that trying to keep me on the straight and narrow was the cause of his heart attack! I was one of many students who sought his advice when making life-changing decisions and he was always ready with sage advice, presented with humor, which made it palatable. We will all miss that wisdom and humor.

— Midge Leitch, V’73, staff vet

Dr. Reid graduated from Cornell University’s School of Veterinary Medicine in 1956 and following military service, earned an MS from Cornell and completed a two-year research fellowship at the VA Hospital in New York. He then joined the Penn Vet faculty at New Bolton Center in 1963. In his 35-year tenure he chaired both the Section of Radiology and the Department of Clinical Studies at New Bolton Center.

Acknowledged by both his friends in the horse world and colleagues in the veterinary profession as the “father of equine radiology,” his opinion was sought worldwide because of his clinical approach to equine radiographic interpretation. His yearly “consulting session” at the AAEP Annual Convention developed into the famed Radiology Panels of the 1970s, during which Dr. Reid’s affectionate and humorous jousting with the panelists kept the lecture rooms filled to overflowing with veterinarians grateful for his insight and entertained by his wit.

Dr. Reid is survived by his brother, Richard; his sons, Todd and Tom; three grandchildren; and his companion, Kathleen Crompton.

(Courtesy of Penn Almanac.)
Each day Penn veterinarians, nurses and technicians deliver the finest care using treatments and procedures that were unimaginable even a short time ago. Clinical care is the capstone of Penn Vet, the place where education, research and treatment come together.

Enhancing clinical care is a core priority of Penn Vet’s capital campaign. Ensuring that animals brought to Penn for care receive the finest treatment—now and in the future—requires new and upgraded clinical facilities on both the Philadelphia and Kennett Square campuses, support for core operations and resources to recruit and retain the finest clinician-scholars.

**CLINICAL CAMPAIGN GOALS**

**Rebuild the George D. Widener Hospital for Large Animals**
- New surgical suites to enable more patient care and provide state-of-the-art biosecurity
- New imaging facilities, including MRI, for improved diagnosis, teaching and patient comfort
- Covered lameness evaluation center

**Renovate the Matthew J. Ryan Veterinary Hospital**
- Expansion of Emergency Service, including new treatment and client areas
- New cardiology and oncology facilities
- First-floor pharmacy for patients

**Recruit and Retain Excellent Clinicians**
- Endowed professorships to retain national leaders
- Five-year term professorships to support innovative research and programs
- Clinical research programs, fellowships and residents

**Invest in Core Services through the Friends of Ryan and the Friends of New Bolton Center**
- Staff support
- New equipment and supplies
- Core operations

“This capital campaign is really about three words: imagination, discovery and action. They all come together in excellent clinical care.”

— Dr. Joan C. Hendricks, VMD, PhD
Gilbert S. Kahn Dean of Veterinary Medicine

$78 M
$47 M

Campaign
- $78 million raised to date
- $47 million to $125 million goal
The incredible generosity of more than 3,000 donors has launched the Widener Hospital’s new surgical suite fund. It has given momentum to the second phase of the New Bolton Center rebuilding campaign in memory of Barbaro. The Barbaro Fund, created in the immediate aftermath of Barbaro’s accident during the Preakness Stakes in 2006, has been used to make both immediate and long-term improvements in patient care at the hospital.

“We felt it was important to make a difference in the life of every animal that receives care in our clinic. We have purchased new equipment for our existing surgical areas so that patients today can benefit from the generosity of those who loved Barbaro. But of equal importance to us was the long-term strength of New Bolton Center, so a portion of the funds are being used to build the foundation of the new surgical suite.”

— Dr. Corrine Sweeney,
Associate Dean for New Bolton Center

More than $700,000 has been raised to date toward Penn Vet’s goal $10,000,000 for the new surgical suite.

“Why do I support the Barbaro Fund? Dr. Dean Richardson said it best in his presentation Porcelain Warrior ‘I fell in love with a horse.’ I will make every effort to continue my support. My best to you and to all at Penn Vet!”

— Dr. Pat Assan, Donor

For more information on how you can contribute to the Campaign for Penn Vet, visit us on the Web at www.vet.upenn.edu.
When Anna Worth, V’78, graduated from veterinary school 31 years ago, she was one of very few women pursuing mixed-animal practice. So when she and her husband, Robert Bergman, V’78, sought a situation where they could practice together, they were confronted with a challenge.

“Many veterinarians didn’t think I was capable of working on large animals, even though I’m almost six feet tall,” recalled Dr. Worth, who grew up in Chadds Ford, Pa., surrounded by pet donkeys, dogs and cats. She persevered, and the couple eventually found positions in a Montana mixed-practice, where Dr. Worth was the only female with a professional degree. Despite her obvious veterinary skill, the local ranchers complained she “didn’t look like a woman” because she always wore jeans. “I was doing the exact same ranch work the guys were doing, which included performing c-sections on cows 24 hours a day throughout the spring,” she remembered. “Despite that, my boss suggested I wear something more feminine. I continued to wear exactly what I wanted to wear.”

This was just the beginning of Dr. Worth’s trailblazing efforts in veterinary medicine, not only as a female pioneer, but also as a champion for animal welfare and a leader in the profession.

In 1979, she and Dr. Bergman purchased West Mountain Animal Hospital, a mixed dairy practice in southern Vermont that included horses and llamas. “Our goal was to enhance the quality of care offered in this area. With that in mind, we immediately pursued accreditation from the American Animal Hospital Association (AAHA),” she related. Their practice grew rapidly.

Leading AAHA
“Following the AAHA guidelines for quality care was key to our success,” noted Dr. Worth, who has just completed a one-year term as president of this venerable organization.

AAHA-accredited hospitals voluntarily choose to be evaluated on 900 standards in five categories: quality of care, diagnostic and pharmacy, management, medical records and facility. Currently, about 3,000 veterinary hospitals participate in this evaluation program.

“Consultants regularly visit these hospitals to ensure compliance with AAHA’s standards for services and facilities,” explained Dr. Worth. “When you are accredited by AAHA, you can be sure you are doing things right. That has always been of the utmost important to our practice.”

Both as a board member and as president of AAHA, Dr. Worth’s leadership has helped advance the veterinary profession. She is especially proud of her work in developing a strong student program. “We recently introduced mentoring guidelines that will be very valuable to students as they make the important transition from student to associate when they begin their first jobs,” she related.

While traveling nationwide during the past year as AAHA president, Dr. Worth also observed the effects of the economic downturn on the veterinary profession. “While our profession is not recession-proof, it is certainly recession-resistant,” she noted. “In some parts of the country, people have been forced to make hard choices about care for their companion animals. Fortunately, we have not seen this in our practice. Our clients are strongly bonded to their pets and we offer them options for treatment that will ensure a good level of care. Good communication with clients is the key.”
Promoting Animal Welfare

Dr. Worth’s long history of service to the veterinary profession began in the early years of her practice when she first joined the Vermont Veterinary Medical Association (VVMA) and quickly became a champion of animal welfare. She set her sights on two goals: instituting standards for humane euthanasia and preventing animal cruelty.

“At that time, animal shelters and veterinarians didn’t see eye to eye on how these important issues should be handled,” Dr. Worth explained. “I was able to get them to work together to ensure humane treatment.”

As a result of her efforts, the VVMA established a euthanasia board that ensures proper training in humane methods of euthanasia throughout the state. In addition, the Vermont Animal Cruelty Task Force was established. This state-wide coalition of private and governmental organizations works to prevent and respond to animal cruelty through communication, education, training, legislation and enforcement. Dr. Worth was honored for these achievements with the Massachusetts SPCA Veterinarian of the Year Award.

“I’m very pleased that our efforts led to a policy change that facilitates reporting of animal abuse by veterinarians in Vermont by offering them protection from lawsuits and other repercussions,” she said.

Dr. Worth’s other professional activities include serving as president of the Society for Veterinary Medical Ethics and chairing the National Council for Pet Population Study and Policy, a group of representatives from 12 animal-related organizations—including the Humane Society of the United States and the ASPCA—who work together on mutual goals regarding homeless pets.

In addition to her professional achievements, Dr. Worth and her husband take great pride in their two children, who are following in their footsteps. Their son, Bo, is graduating from veterinary school this year, and daughter, Sarah, works for the Center for Biologic Diversity in Tucson.

The couple recently expanded their practice facilities with a new clinic designed to further enhance quality of care. Although they converted their practice to companion animals a number of years ago, they still care for some llamas, the last vestige of their mixed practice.

Concluded Dr. Worth, “I’ve always been grateful to be a veterinarian and work in my passion.”
Penn Veterinary Medicine hosted its 109th Penn Annual Conference on March 11 through 13, 2009, at the Sheraton City Center Hotel in Philadelphia, offering 16 continuing-education credit hours. The conference celebrated the School’s 125th anniversary this year with more than 1,100 colleagues, alumni, friends and clients and more than 85 exhibitors and sponsors at the largest veterinary professional education experience in the region.

The three-day conference began March 11, with more than 40 registrants certified through the pre-conference seminar, PennHIP®. On March 12 and 13, full-conference registrants participated in “Surgical Strategies: Find It and Fix It,” which offered 96 general sessions, 10 lunch-with-expert exchanges and one keynote presentation related to companion animal, food animal, equine and veterinary technician education. Session topics included soft tissue and orthopaedic surgery, chronic and acute pain, rehabilitation medicine, special species care, emerging infectious diseases, imaging, and professional issues such as abuse reporting and pet insurance.

Also offered was the inaugural Veterinary Business Management Association event, “Inviting the Elephant in the Room: Creating a Financially Healthy Veterinary Profession”—a roundtable exchange for profession leaders, lawmakers, practitioners and students on the financial crisis facing the veterinary profession.

Alumni and faculty stars were highlighted at the Alumni Awards Celebration and Annual Meeting on Thursday evening, hosted by the Veterinary Medical Alumni Society (VMAS), preceding the annual dean’s reception.
Several alumni in reunion classes ending in ‘3 and ‘8 received the prestigious Alumni Awards of Merit. These awards are given annually by VMAS for contributions that advance knowledge in biomedicine, promote animal welfare through public education of animal owners and benefit society through civic activities that advance the profession’s and the school’s good name. This year’s Alumni Award of Merit Recipients are Daniel Flynn, V’58; Daniel Rice III, V’63; George Hartenstein IV, V’68; David Nunamaker, V’68, James Stewart, V’68 and Susan Emeigh Hart, V’83.

Outgoing VMAS president Michael R. Moyer, V’90, presented two inaugural VMAS President’s Awards, which honor individuals providing outstanding service to the school. Awards were presented to Malcolm Keiter, associate dean of admissions, and posthumously to St. George Hunt, V’86. Suzi Robinovitz, St. George’s widow, received the award on his behalf.

The VMAS Excellence in Teaching Award was given to Dr. Michael Ross, professor of surgery at New Bolton Center. The recipient, selected by Penn Vet alumni who have graduated within the past ten years, is a faculty member who helps encourage and maintain the high standard of teaching at the school.

Also, by a majority vote of alumni present at the VMAS Awards Celebration and Annual Meeting, the following new VMAS Executive Board members were elected: Susan Emeigh Hart, V’83; Susan Jacobson, V’77; Eileen Mera, V’86; Dominick Pulice, V’86; William Solomon, V’68; Sheldon Steinberg, V’59; Raymond Stock, V’75, GGS’02; and Jacob Werner, V’00, to join current members Heather Berst, V’00; Hank Croft, V’78; Kristin Dance, V’98; Linda Rhodes, V’78; Brenda Stewart, V’70; Robert Stewart, Jr., V’99; and Alexandra Wetherill, V’80. Carla Chieffo, V’86, GR’98, was installed as incoming president, and Peter Herman, V’69, was named president-elect. Active past presidents also were recognized for their continuing service: Eric Bregman, V’95; Jack Bregman, V’66; Michael R. Moyer, V’90; Suzanne Smith, V’82; James V. Stewart, V’68; Robert Stewart, Sr., V’68; and Marilyn Weber, V’75, and outgoing board members were acknowledged: Jileen Briscoe, V’02; Paul Dougherty, V’64; Rob Mankowski, V’04; and Jules Silver, V’47.

Alumni celebrations continued into Friday, with a young alumni luncheon that boasted more than 150 participants, including the Class of 2009, our newest alumni members. Also on Friday, the annual meeting of the American Museum of Veterinary Medicine attracted more than 20 participants, and other focus-group sessions were held for referring vets and participants in the school’s Opportunity Scholarship Program.

If you wish to receive your CE certificate for Penn Annual Conference 2009 or for previous conferences, please send your request with a self-addressed, stamped envelope to: ATTN: Penn Annual Conference, 3800 Spruce Street, Suite 172E, Philadelphia, PA 19014. Contact Coreen Haggerty, director of alumni relations, with inquiries at 215.898.1481 or haggertc@vet.upenn.edu.

Plans are under way for Penn Annual Conference 2010—save the date for March 3–5, 2010!
As Penn Vet celebrates its 125th anniversary in 2009, the Veterinary Medical Alumni Society celebrates 122 years—a volunteer organization instituted the year the first Penn Vet class graduated. As I begin my first term as president of this “VMAS,” I think about how we alumni can give back to our profession and our school. The word that keeps coming to mind is service.

Our profession is facing many challenges today. The cost of a veterinary education has sky-rocketed and veterinary students are now more in debt than ever. There is a shortage of veterinarians in rural practice due to the declining number of graduates entering that field as well as those who leave these areas after several years. Our school also faces economic challenges. The commonwealth has proposed a 10-percent budget cut for the school this fiscal year, a $20-million cut from July 2009 to June 2010.

Dr. Joan C. Hendricks, V’79, GR’80, the Gilbert S. Kahn Dean of Veterinary Medicine, continues to update alumni, staff and friends regularly about the impact of the commonwealth’s cut and the economic downturn on the school. She invites all alumni to email her at lean@vet.upenn.edu with thoughts, comments and ideas.

In these unprecedented times, how can we alumni serve the school and our profession? Let me first acknowledge that many alumni have and continue to serve already—by volunteering, fundraising and working as ambassadors of the school and as pioneers in the profession. In fact, at the Penn Annual Conference (PAC), six alumni in reunion classes were recognized for their commitment to the profession and to our school through the prestigious Alumni Award of Merit (Daniel Flynn, V’58; Daniel Rice III, V’63; George Hartenstein IV, V’68; David Nunamaker, V’68; James Stewart, V’68; Susan Emeigh Hart, V’83). These alumni have given back in many ways—from research that benefits animals and human to mentoring vet students to supporting the school.

VMAS also honored two individuals who greatly impacted people’s lives with VMAS president awards. The first VMAS president’s award was given to Malcolm Keiter, associate dean for admissions, for his 20-year commitment, dedication and service to the candidates, students and alumni of the school. The second was given posthumously to St. George Hunt, V’86. “Saint,” as many of us knew him, was a member of the alumni board, participated on the Admissions Committee, cared about students and was dedicated to the school’s mission. He was also a classmate of mine and a dear friend. I personally will miss his invaluable input on the VMAS board and his friendship.

So I call on you to serve. Get involved. Start early. Stay committed.

I can remember as a new graduate, the alumni society was the farthest thing from my mind. Today, the school is working hard to invite students into the alumni family even before graduation. Each year, VMAS hosts a young alumni luncheon at the PAC. This year we invited young alumni, along with senior Penn Vet students. Here young alumni and soon-to-be alumni can talk with VMAS board members about what the alumni society is doing and how to get involved.

Come to Alumni Reunion Weekend. This year’s reunion reception is May 15 at New Bolton Center’s Allam House and May 16 in the city at the Hill Pavilion. Reunion weekend is a chance to revisit the school’s campuses, but it also is much more; it is a chance to network with other alumni and faculty. By talking with others, you may find opportunities to serve the school or the profession. Be sure to visit the Penn Vet Web site (www.vet.upenn.edu) for more information.

Also this spring, Penn Vet and the Wharton School jointly launch the Executive Veterinary Leadership Program. Open to all veterinarians, it is designed to prepare us for making a greater contribution as public-health leaders. Again, visit the school’s Web site for more details.

Finally, my goal as president for the next two years will be to find ways we can have a greater impact on our school and profession. Join me as we have the true opportunity to change the course of our profession and history.

—CARLA CHIEFFO, V’86 GR’98
1957 – In December 2008, the City of El Paso, Texas, recognized Lea Hutchinson as the first-ever director emeritus of the El Paso Zoo. This honorary title recognizes meritorious, outstanding and dedicated service of a former director of an organization. Dr. Hutchinson has served as the city’s director of veterinary services, El Paso Zoo veterinarian, zoo director and deputy director at the City-County Health and Environmental District.

1973 – Jerry D. Frantz retired from Bristol-Myers Squibb Pharmaceutical Research Institute after a 19-year career there that culminated in his service as vice president of drug-safety evaluation. Dr. Frantz also served as president of the Society of Toxicologic Pathologists and was a founding member of the International Academy of Toxicologic Pathologists.

1991 – Nancy Kate Diehl was awarded a Juris Doctor degree from Concord Law School of Kaplan University. Dr. Diehl is a regulatory veterinarian for the Pennsylvania Horse Racing Commission. She plans to use her law degree in legal research and consulting related to veterinary medicine.

1991 – Heidi Stout was named executive director of Tri-State Bird Rescue and Research, a private nonprofit wildlife rehabilitation and rescue organization also involved with oil-spill response, in Newark, Del. Dr. Stout has served as director of oil-spill programs at Tri-State since 2000.

1995 – Steven Suter, veterinary oncologist in charge of the Canine Bone Marrow Transplant Program at North Carolina State University College of Veterinary Medicine, recently used a relatively new technique to treat a seven-year-old dog diagnosed with acute lymphoblastic leukemia. Dr. Suter used leukophoresis machines—the same equipment used in human medicine—to harvest the dogs own healthy stem cells from the peripheral blood prior to full-body irradiation.

2003 – Jessica Melman joined Dermapet as director of veterinary and technical services after an internship and more than five years of practicing small-animal medicine and surgery in New York City. Dermapet manufactures all-natural and environmentally sensitive pet foods and products.

2005 – Michael Pierdon received the Young Swine Veterinarian of the Year Award from the American Association of Swine Veterinarians (AASV). Established in 2008, the award is given annually to an AASV member five or less years post-graduation who has demonstrated the ideals of exemplary service and proficiency. Dr. Pierdon owns and operates Pierdon Swine Veterinary Services in Elizabethtown, Pa.

2007 – Jeffrey Burdick was named Veterinarian of the Year 2008 by the Delaware County SPCA in Pennsylvania. As volunteer clinician, Dr. Burdick provides surgical and medical services pro bono to the animal shelter by spaying and neutering and by providing medical care and vaccinations to adoptive pets on weekends. Dr. Burdick is employed by GlaxoSmithKline in King of Prussia, Pa., and owns a small livestock veterinary practice in the Delaware/ Chester County region.

2007 – Jennifer Muller has launched a mobile veterinary office in Philadelphia in November 2008 called “Mobile Veterinary Services.” MVS provides full physical exams, bloodwork, vaccines and medical testing for small animals. Dr. Muller also continues to work on governmental policy issues by serving on Pennsylvania’s Dog Law Advisory Board since 2006, and as Chair of the Canine Health Board since 2009. Dr. Muller’s husband, Todd Bernstein, is president of Global Citizen. He is also known for his work in creating the national Martin Luther King Jr. Day of Service, which he first started in Philadelphia. The couple shares their home with many cats, dogs and a cockatoo. Dr. Muller can be reached at mullervmd@gmail.com

1948 – Andrew C. Colando on December 26, 2008.
1957 – Burleigh P. Anderson on December 24, 2008.


Corrections:
Sydney M. Evans was listed incorrectly in Bellwether 69; she is a member of the Class of 1977.
Ava Logan was listed incorrectly in Bellwether 69; she is a member of the Class of 1985.
Penn Vet is proud to print Bellwether magazine on FSC (Forest Stewardship Council) certified paper, which supports the growth of responsible forest management worldwide through its international standards.

**JUNE 2009**

**Wednesday, June 17, 2009**
Penn Vet 125th Anniversary Research Symposium—“Animal Diseases in Translational Research”
*Penn Medicine, BRB Building II/III*  
*Philadelphia, PA*

*Symposium organizers: John H. Wolfe, VMD, PhD, professor and director, Walter Flato Goodman Center for Comparative Medical Genetics.*

To honor our history during our 125th anniversary year, we are holding a celebratory research symposium to highlight contributions and focus on a bright future of research on animal diseases in biomedicine. Several distinguished external speakers are invited as well as Penn Vet faculty, who will present studies in animal diseases that have, or may, facilitate translation of basic studies to clinical application. The focus of the conference will be on naturally occurring animal diseases in the domestic animal species, including both captive and clinical populations. Translational research, interpreted broadly, can include any therapeutic strategy, such as transplantation, pharmacologic, recombinant protein, genetic, stem cell, surgical, engineering, synthetic, electronic, nano-technologies and other approaches, as well as understanding mechanisms of disease to provide new avenues for therapy. Talks will spotlight clinical diseases that can be studied to advance medicine for all species.

**AUGUST 2009**

**Friday, August 14, 2009**
Pennsylvania Veterinary Medical Association  
*Keystone Veterinary Conference*  
*Reception*  
*Hershey, PA*

**SEPTEMBER 2009**

**September 24–27, 2009**
The Robert M. Kenney Equine Reproduction Symposium (26 CE credits)
*Longwood Gardens and New Bolton Center*  
*www.robertmkenneysymposium.com*

The Robert M. Kenney Symposium is a state-of-the-art continuing-education program for veterinary and animal science professionals and current students, reflecting Dr. Kenney’s broad interests and influence on the advancement of knowledge in equine reproduction. The program includes a two-day symposium with state-of-the-art review presentations and discussions followed by two days of wet labs, all presented by Dr. Kenney’s residents, graduate students, and colleagues. The program proceeds will benefit the Robert M. Kenney Opportunity Scholarship Endowment for support of veterinary students pursuing equine reproduction at Penn Vet.

**OCTOBER 2009**

**Saturday, October 24, 2009**
**Parents & Partners Day**  
*Philadelphia and New Bolton Center campuses*  

Orientation for families of first-year students.

**NOVEMBER 2009**

**Monday, November 16, 2009**
**White Coat Ceremony**  
*Zellerbach Theater, Annenberg Center, Philadelphia, PA*

**Friday, November 20, 2009**
**Rush Shippen Huidekoper Society Dinner**  
*Philadelphia Campus*

**DECEMBER 2009**

**Monday, December 7, 2009**
American Association of Equine Practitioners  
**Annual Convention**  
*Penn Vet Alumni Reception*  
*Las Vegas, NV*