

# bellwether

NUMBER 66 | SPRING 2007

THE NEWSMAGAZINE OF THE UNIVERSITY OF PENNSYLVANIA SCHOOL OF VETERINARY MEDICINE

## 100 PUSHING

Penn Vet's Feline Renal  
Transplant Program  
Approaches the  
Magic Number

inside  
**Barbaro**  
**Tribute**  
*a legend in motion*



**Penn**  
Veterinary Medicine

*Many Species. One Medicine.™*

**OFFICE OF DEVELOPMENT, ALUMNI  
RELATIONS AND COMMUNICATION**

**assistant dean of advancement  
and communication**

KATE JUDGE

**director of communication**

GAIL LUCIANI

**assistant director of communication**

SUSAN I. FINKELSTEIN

**director of development for the  
matthew j. ryan veterinary hospital**

ELANA BECK ARONS

**director of development for new bolton center**

JANE SIMONE

**director of alumni relations**

COREEN HAGGERTY

**major gifts officer**

DORI MYERS

**development coordinator for new bolton center**

PATRICIA HALL

**marketing communication coordinator  
for new bolton center**

JENNIFER RENCH

**stewardship coordinator**

JENNIFER M. WORDEN

**assistants**

KAREN COGHLAN

JOHN DONGES

ANDREA WITHERS

**photographers**

CANDACE DICARLO

JOHN DONGES

LISA GODFREY

SABINA LOUISE PIERCE

JENNIFER RENCH

**writers**

SUSAN I. FINKELSTEIN

GAIL LUCIANI

NANCY WEST

**designer**


ANNE MARIE KANE

We'd like to hear your praise, criticisms  
or comments.

**Please address your correspondence to:**

Gail Luciani, Editor  
University of Pennsylvania  
School of Veterinary Medicine  
3800 Spruce Street  
Philadelphia, PA 19104-6010  
(215) 898-1475  
luciani@vet.upenn.edu

None of these articles is to be reproduced in  
any form without the permission of the editor  
of *Bellwether*.

 Printed on recycled paper

© Copyright 2007 by the Trustees of the University of Pennsylvania. The University of Pennsylvania values diversity and seeks talented students, faculty and staff from diverse backgrounds. The University of Pennsylvania does not discriminate on the basis of race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, or status as a Vietnam Era Veteran or disabled veteran in the administration of educational policies, programs or activities; admissions policies; scholarship and loan awards; athletic, or other University administered programs or employment. Questions or complaints regarding this policy should be directed to: Executive Director, Office of Affirmative Action and Equal Opportunity Programs, Sansom Place East, 3600 Chestnut Street, Suite 228, Philadelphia, PA 19104-6106 or by phone at (215) 898-6993 (Voice) or (215) 898-7803 (TDD).

# contents spring 2007



# bellwether

## features

- 5 EDUCATION NEWS
- 12 KIDNEY TRANSPLANTS FOR CATS
- 28 PENN ANNUAL CONFERENCE

## departments

- 3 EDITORIAL NOTES
- 4 DEAN'S MESSAGE
- 8 FACULTY FOCUS
- 20 RESEARCH BRIEFS
- 22 CLASS NOTES
- 26 ALUMNI PROFILE
- 28 SCHOOL EVENTS

## about the cover:

In 1998 Penn Vet's Feline Renal Transplant Program was successfully initiated by Dr. Lillian R. Aronson, assistant professor of small animal surgery. Since then, nearly 100 cats have undergone kidney transplants at Penn, and life expectancies of recipients continue to increase. Here we see Dr. Aronson holding her 96th kidney transplant patient, Speedy, who was in for a routine post-surgery checkup. Photo by Lisa Godfrey.

## To the Editor

*Bellwether* 66 is outstanding not only for the exceptionally well-written article on Barbaro but the entire layout and choice of subjects for the articles. I'm saving this to show to my adult children and friends.

—John E. Sonne, V'74 – Camillus, N.Y.

I wanted to compliment you on the great issue of *Bellwether*. The articles were heartwarming and honest. Reading about the staff and teamwork really made me want to be a part of it. I'm glad I was at least able to donate to the Barbaro Fund, and I did send Dr. Richardson a letter of praise and encouragement some time ago. I also enjoyed the "Vet 2 Vet" article, and putting the children's get-well cards into the article was a nice touch. You're all an amazing group and you especially did a great job on this issue of *Bellwether*.

—Jill M. Srnick – Green Valley, Ariz.

What a wonderful article on the whole Barbaro/New Bolton Center experience. Very interesting to read about the impact of that sudden attention and the professional, intelligent way it was handled by the George D. Widener Hospital. I liked the fact that the article stressed the importance of the whole team at the New Bolton Center. No job is unimportant—a fact not always highlighted. Thank you for a great write-up and a great job in general. I've been following the story since 60 seconds into the Preakness. All has been handled with great class on your end.

—Sandra Switzer – La Crescenta, Calif.

I read the great article on Barbaro in the last issue of *Bellwether* and again was awed by the grace you all have exhibited under the international scrutiny of so many. I just want to thank you and the team from the University of Pennsylvania School of Veterinary Medicine for the unwavering support of not only Barbaro, but of those of us around the world who felt tied to Barbaro.

The article made me realize more about how many people are involved in this healing and the various statistics demonstrate how hard everyone has worked to satisfy the thirst for knowledge about this amazing horse. Thanks for what you do and thanks to all the other members of the team.

—Judy Bright – Keene, N.H.

I have received my first copy of *Bellwether* and love it! Thank you for the article on the entire Barbaro team. The people behind the scenes (such as in the mailroom) are usually the forgotten souls during an event like this. Bravo to all who remembered EVERYONE!

—Kaye Brown – Alexandria, Va.



## Editor's note

We put off writing the final Barbaro update on our Web site. After months of reporting the medical ups and downs of 2006 Kentucky Derby winner Barbaro at New Bolton Center, it took us several days before we could post the story's end. Now, this issue of *Bellwether* features our good-bye to a champion, as well as our thanks to the thousands of people who showed their support, from on-line good wishes and e-mails to packages of mints and bunches of carrots for Barbaro and his fellow patients; from pizza and candy for the staff to donations to the Barbaro and Research for Laminitis Funds. At Penn Vet, we often speak of the healing connection between humans and animals; Barbaro forged a connection among people that did not previously exist, and his legacy is one of hope as we join to fight the condition that took him from us.

The healing connection can also be found in other work we do, each and every day. Our renal transplant program offers cats a second chance at life, while it teaches future veterinarians the science behind organ transplantation. Research from this program has implications for human medicine, as the healing connection comes full circle. Our feature article shows how our students, learning to heal and grounded in the basic sciences, are being trained to be at the forefront of every aspect of veterinary medicine, from understanding infectious disease to pulling out all the stops to save a single life. We hope that you will enjoy this special issue of *Bellwether*, and that you will visit our Web site at [www.vet.upenn.edu](http://www.vet.upenn.edu) to learn more about Penn Vet.

—GAIL LUCIANI



## dean's message

Imagine a world without vets. Farm animals and pets would not receive vaccinations or preventive antiparasite treatments. Nutrition would be lacking so domestic animals would not thrive and would be prone to disease. Animals would become pregnant when they shouldn't—leading to overpopulation of unwanted animals; and not become pregnant when they should—leading to failure for farmers and other animal producers. We would not develop or apply new treatments to help animals. Behavior problems would be handled by abandonment (the most common reason pets are surrendered to shelters) or physical force.

This is not just a thought exercise in many parts of the world, including rural and low-income urban areas of the United States. In the worst cases, the absence of veterinary attention and advice leads to pestilence and famine—vets are the first-line responders to identify emerging animal diseases and to monitor new diseases transmitted from animals to humans, and of course veterinary care and advice dramatically improves food animal health and productivity. Even where things are not quite this dire, we are facing a growing shortage of veterinary specialists, vets interested in research, vets to perform public service including support to agriculture, and academic vets—those who will teach the next generation of vets.

So, what is Penn Vet doing about the shortage? Our newly opened Hill Pavilion has provided us with superb new student facilities, including two lecture classrooms seating 130 each. Now, we are actively pursuing renovating and expanding our antiquated Multidisciplinary Laboratories and improving the Gross Anatomy Laboratory so that we will have facilities to increase our class by 10-12. We feel strongly that the education of veterinarians is a public health issue and a national imperative. The University of Pennsylvania and Penn Vet are actively working together to plan policies at the Federal level to educate Congress about the urgency of the shortage of veterinarians. Penn Vet is part of the lobbying efforts of the American Association of Veterinary Medical Colleges to support passage of the Veterinary Workforce Expansion Act that would support new facilities for veterinary schools, and the National Veterinary Medical Service Act to support debt relief for veterinarians

entering underserved areas. You can help by contacting your congressperson when requested.

To provide a vitally needed international platform to applaud and inspire innovative leadership by veterinarians from around the world, we recently announced the Penn Vet World Awards. Beginning next year, three awards of \$100,000 each will be given to help one vet and two vet students realize their dreams to change the world. See below for more information.

In parallel to our work to broaden our impact on public health, we must keep our intense connection with and tender compassionate care for individual animals. As veterinarians, we are critical in the link between domestic animals and their owners, fostering the healing connection between animals and people.

—JOAN HENDRICKS, V'79, GR'80  
THE GILBERT S. KAHN DEAN OF  
VETERINARY MEDICINE



Photo by Sabina Louise Pierce

### Penn Vet World Awards

Transforming Veterinary Medicine

The Penn Vet World Awards in Animal Health recognize

- Innovation • Creativity • Enterprise
- Leadership in Veterinary Medicine

The Awards were established in 2007 by a major gift from the Hill Family Foundation to identify and encourage visionary thinking, life-changing accomplishment, and ambition in the profession. Each of the three awards provides \$100,000 in unrestricted funding to the recipient, making these the world's most generous awards in veterinary medicine.

The Penn Vet World Awards recognize the importance to society of veterinary medicine and bring great distinction to the profession.

Detailed instructions for nominations will be available by September 1, 2007 at [www.vet.upenn.edu/worldaward](http://www.vet.upenn.edu/worldaward)

### Awards underwritten by

Vernon and Shirley Hill of the Hill Family Foundation

The World Leadership in Animal Health Award is presented to someone who has excelled as a practicing veterinarian.

The Penn Vet Student Inspiration Awards are presented to two extraordinary current Penn Vet students who demonstrate the potential to significantly advance the frontiers of veterinary medicine.

# Curriculum Changes Enhance Learning at Penn Vet

BY NANCY WEST

From Penn Vet's old "Classroom A" to the new state-of-the-art Hill Pavilion, from uniform curriculum to the Academic Majors Program, from classroom lectures presented with slides to digitally recorded surgeries available on-line—this is definitely not your father's veterinary school education.

Over the past several decades, the educational process at Penn Vet has undergone dramatic changes that have greatly enhanced learning. One place this is most apparent is in the School's curriculum. Students have enjoyed an increasing amount of flexibility since 1970, when the core-elective curriculum was introduced.

"Before 1970, everyone took the same exact courses, no matter what their interests," recalled Associate Dean **Jeffrey Wortman, V'69**. "Penn Vet was one of the first veterinary schools that developed a core-elective curriculum to give students the opportunity to expand their knowledge in those areas of greatest interest to them."



Vet students learning the art of blacksmithing around the turn of the twentieth century.



Dr. Jeffrey Wortman, V'69, (left) helps Ian Dribben, V'05, with his hood on Commencement Day.

This trend toward flexibility took another giant leap when the academic majors program was implemented in the 1994–95 academic year. Since then, students have a choice of five majors—equine, food animal, small animal, small and large animal mixed, and large animal mixed—along with increased individual flexibility to tailor their clinical rotations to their own professional career goals. Previously, all students were required to take identical 34-week rotations. Academic majors reduced that to 12 weeks of foundation rotations; the rest are elective.

"Another unique feature of our curriculum is that the core pre-clinical coursework is completed in two and a half years," noted Dr. Wortman. "So the second half of the third year is all elective."

**Jonathan ("J. D.") Foster, V'07**, a small animal major, has maximized this flexibility in several ways. First, he opted for double early entry into clinical rotations in the second half of his third year, skipping both the small

Photo by Sabina Pierce



The White Coat Ceremony is an important milestone in the life of a Penn Vet student. It marks the end of the students' training in the classroom, and the beginning of their clinical rotations. Pictured are, left to right, Lindsay Thalheim, V'08, Leandra Thompson, V'08, and Shelby Freda, V'08.

animal and large animal blocks of elective curriculum. "Double early entry enabled me to take eight to 10 additional rotations," said J. D. "For me, this was the best choice because I'm a very hands-on learner. Seeing patients with a particular disease helps me learn much better than reading about it in a textbook or hearing about it in a lecture. Taking certain rotations two or three times really boosted my confidence in my skills."

According to Dr. Wortman, the early entry option was limited to about five students before the academic majors program was implemented. "Now half the class is choosing to skip either the small animal or large animal block and extend their clinical year," he explained.

Students who choose the equine, food animal or large animal mixed majors have the greatest flexibility because no specific rotations are required. As an equine major, **Amanda Theodore, V'08**, is reaping the benefits. "I was able to create a completely individual rotation schedule that really suits my interests," she said. "I want to go into equine practice, but I also want to have the capability to care for small animals, so I've chosen rotations that will give me the breadth of experience to do both."

acupuncture and I decided to become certified in it," he said. Other students have benefited as well. Since his rotation, at least five have gone to Florida for the same independent study.

Last year, Amanda Theodore completed an independent research project in Penn Vet's Immunology Department. Next year, she looks forward to studying equine behavior along with seven other students as an independent study at New Bolton Center. "Receiving credits for independent study is great," she stated. "You gain some really unique and valuable learning opportunities." 🐾

The academic majors program also brought an expansion of extramural rotations and independent study and research opportunities for which students receive credit. Beginning with the Class of 2006, students also have the option to take a two-week private-practice externship that can be used to reduce the number of elective credits required for their graduation. Currently, more than three-quarters of the students participate in extramural opportunities.

J. D. Foster organized an extramural project at the University of Florida's School of Veterinary Medicine, which has a section devoted to acupuncture and alternative medicine. "Through my two-week independent study rotation, I learned that I'm definitely interested in doing



J. D. Foster, V'07



# The Business of Veterinary Medicine

## *VBMA Teaches Students It's Not Dog Eat Dog*

BY MICHAEL JENNINGS, V'10, AND DEIRDRE WEISSMAN, V'07

**T**he Veterinary Business Management Association (VBMA) is a student-driven organization dedicated to advancing the veterinary profession through increasing business knowledge, creating networking opportunities and empowering students to achieve their personal and professional goals. The VBMA was created in 2002 by Penn Vet students who expanded it into a national organization currently boasting 22 chapters at veterinary schools across the country. The VBMA organizes speaker events designed to open students' eyes to those aspects of veterinary medicine that get little attention in veterinary school yet play a large role in a veterinarian's daily life, such as communication, team building, leadership, personal financial skills, key practice performance indicators, accounting skills, marketing and branding, to name a few.

In 2003, the Penn VBMA developed a Business Certificate Program soon endorsed by the School. Sixty percent of Penn Vet students are currently enrolled in the Penn Vet–VBMA Business Certificate Program, paying additional tuition and sacrificing precious evenings and weekends to be educated by very sought-after speakers, which have included Dr. Jim Wilson (founder of Priority Veterinary Management Consultants), Shawn McVey (CEO of Eye Care for Animals), Gary Glassman (a CPA who counsels veterinarians in financial matters) and Dr. Gary Burge (owner of the National PetCare Centers). In 2005, the Penn VBMA also created the Commerce Bank–VBMA Speaker Series, which hosts successful business visionaries from outside the veterinary industry such as Richard Teerlink, former chairman of Harley-Davidson, and Jim Rudolph, CEO of Rita's Water Ice, to shed light on how they revolutionized their industry and to inspire veterinary students to think about how we can do the same for our profession.

In our monthly lunch talks, the VBMA has worked to bring relevant topics to the Penn Vet community. Highlights of the past year included a presentation by renowned dog trainer Brian Kilcommons to more than 160 students about animal behavior and the effect of the animal–human bond on veterinarians. Through personal anecdotes, examples and advice, he addressed how pet behavior problems will be a major issue we deal with as veterinarians, not only with the potential to damage the relationship among client, pet and veterinarian, but also negatively affect the practice's bottom line. Mr. Kilcommons shared training tips on how to handle “prob-

lem” animals, and how handling behavior concerns early with clients can more than 80 students returned (some with their animals) for a live demonstration showing how to handle animals to nurture the relationship among veterinarian, pet and client.

In addition, earlier this spring, **Dr. Anthony DeCarlo**, V'82, CEO of Red Bank Veterinary Hospital, spoke to a full house on “Medicine is the Easy Part,” during which he shared insights about challenges he faced starting and building his practice into the country's largest privately



Dr. Tony DeCarlo, V'82, shares his insights on running a veterinary clinic with Penn Vet students.

owned veterinary hospital. He stressed quality care of patients and client satisfaction; as those in a service industry, it's crucial for veterinarians to always put the patient and owner first. He invigorated students with his stories and approaches to business, and provided many useful tips on being a smart manager and great leader by hiring, keeping and supporting great employees. Dr. DeCarlo's commitment to helping the next generation of veterinarians was evident, and the VBMA looks forward to welcoming him back.

The Penn VBMA is already busy making plans for next year, continuing its goal of finding unique ways to educate and prepare the next generation of veterinarians so that we can be successful and the profession can keep thriving. ■

## Adrian R. Morrison, Jr., D.V.M., Ph.D.



Photo by John Donges

**Name:** Adrian R. Morrison, Jr.

**Birthplace:** Philadelphia, PA

**Marital status:** Married, five children

**Position:** Professor Emeritus of Behavioral Neuroscience, Department of Animal Biology, School of Veterinary Medicine

**Degrees:**

1. B.A., Franklin and Marshall College, 1957
2. D.V.M., Cornell University, 1960
3. M.S., Cornell University, 1962
4. Ph.D., University of Pennsylvania, 1964

**Research interests:** During nearly four decades of research in Penn's Laboratory for the Study of the Brain in Sleep, Morrison has explored the nature of rapid eye movement (REM) sleep in cats. These studies have helped uncover the causes and effective treatment for REM behavior disorder in humans, a neurological malady in which people literally act out their dreams, often injuring themselves or others.

Dr. Morrison and members of his lab are working to determine what structures prevent behavioral arousal from rapid eye movement sleep, given that the brain in REM exhibits most of the features of the brain in alert wakefulness. They employ primarily behavioral and pharmacologic techniques. Their current focus is the role of the amygdala (a group of nerve cells adjoining the temporal lobe of the brain and involved in emotions of fear and aggression) in the control of REM onset and its maintenance.

**Other research projects:** "We've now moved into studying sleep in relation to post-traumatic stress disorder. I've worked with my colleague at the Veterans Administration Hospital for more than 20 years; he came to work in the lab because he was trained in neurophysiology and also as a clinician. So we've studied

sleep in post-traumatic shock disorder patients. I would like to find a drug that, if you gave it to people right after trauma, they wouldn't have these terrible memories and disruptions of sleep. And only about 30 percent of the people who are part of or witness a traumatic event actually experience it this problem."

**The author:** Dr. Morrison has authored or co-authored more than 150 journal articles and seven books. He has just finished writing a book, *Animal Rights and Human Obligations: The Boundaries of Humanity*. "It is both science and some personal insights," he explained, "and it covers the gamut as far as animals go and different animal uses; it's not just about biomedical research. It explores what animals are, how they might think, and so forth."

Never one to rest on his withers, Dr. Morrison has already started writing a book called *REM Sleep: A Biography*. "I've spent my life with REM sleep, and you work with a phenomenon for much more than half your life, and it becomes a person—so that's why I'm calling it a biography. It's more on the edge, but more toward the science audience, particularly students, but a layperson can also gain from it."

**Beginnings:** "When I went to Pisa, Italy in 1964 it was not strictly to study sleep at all, but it had something more to do with reticular formation [the part of the brain involved in stereotypical actions, such as walking, sleeping and lying down]. But I got over there, and I was placed in the lab with a person who studied muscle control in sleep. It was just chance that I got into this REM Sleep Behavior Disorder."

**Sidekick:** Photos of Buster, his cat, adorn the wall of Dr. Morrison's office, alongside those of his grandchildren and other family members. "Over the years, I'd been so focused on trying to defend biomedical research, that I was not thinking about how much I love animals, and Buster brought me back to that reality. And in my lectures, I refer to him sometimes, so I'm kind of crazy about him. I entered him into a cute animal contest six or seven years ago. I called the picture 'The Cat in the Vat.' He should have won."



**Future plans:** "Writing books will keep me going for a long time. I just told my wife today that I won't ever be a pest in terms of retiring. I often say that I would sort of like to die in this office so I wouldn't have to clean it out or do anything; somebody else would have to do it," Dr. Morrison said as he swept his arm across his space covered with perhaps thousands of shelved and unshelved books, photos, scientific objects, personal keepsakes—the memorabilia of 40-plus years of teaching and research. "How do you clean up something like this?"



## SCAVMA Teaching Awards Ceremony

The Student Chapter of the American Veterinary Medical Association's Teaching Awards Ceremony was held April 23, 2007, at the Hill Pavilion. Before the presentation, Vernon Hill II, founder, chairman and CEO of Commerce Bank, announced the launch of three Penn Vet World Awards, the first veterinary medicine awards of their kind, designed to recognize innovation, creativity and leadership in the profession.

Starting next year, the Penn Vet World Leadership in Animal Health Award will be presented 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 will provide the recipient with \$100,000 in unrestricted funding.

In addition, the Penn Vet Student Inspiration Awards will be presented to two Penn Vet students who demonstrate the potential to significantly advance the frontiers of veterinary medicine. An award of \$100,000 in unrestricted funding will be given to each recipient.

### The 2007 Teaching Awards:

The Carl Norden-Pfizer Distinguished Teacher Award: **Dr. David Holt**, chief of Ryan's Section of Surgery and professor of surgery.

**Dr. Holt** also was the recipient of a 2007 Lindback Distinguished Teacher Award.

The Dean's Award for Leadership in Basic Science Education: **Dr. Jean-Pierre Saint-Jeannet**, associate professor of developmental biology.

The Dean's Award for Leadership in Clinical Science Education: **Dr. Tom Parsons**, associate professor of swine production medicine.

The Class of 2007 presented awards to **Dr. David Diefenderfer, V'81**, senior research associate and orthopaedic surgeon (Ryan); **Dr. Kathryn Wotman**, lecturer in medicine (NBC); **Dr. Siobhan O'Neill**, intern (Ryan); **Dr. William Culp, V'04**, surgery resident (Ryan); **Dr. Diana Short**, resident (Ryan); **Tiffany Harris**, technician (Ryan) (*not pictured*); and **Emily Zugg**, technician (NBC).

The Class of 2008 presented awards to **Dr. Kenneth Drobatz**, director of Ryan's Emergency Service, and **Dr. Eric Birks**, assistant professor of exercise physiology (NBC).

The Class of 2009 presented an award to **Dr. Robert Gilley**, assistant professor of surgery (Ryan).

The Class of 2010 presented an award to **Dr. Olena Jacenko**, associate professor of physiology (Ryan).

The William R. Boucher Award for Outstanding Teaching at NBC by a House Officer: **Dr. Diana Short**, medicine resident (NBC).

The Jules and Lucy Silver Animal Bedside Manner Award: **Dr. Carrie Palm**, medicine resident (Ryan) (*not pictured*).

The Residents' Award for Outstanding Teaching by a Faculty Member: **Dr. Kenneth Drobatz**.

The Interns' Mentor Award: **Dr. William Culp, V'04**, surgery resident (Ryan).

Veterinary Technician Teaching Awards: **Ellen Gratch** (Ryan) (*not pictured*) and **Kasey McCafferty** (NBC).

Senior Student Patient Care Award (presented by nurses): **Jonathan Foster, V'07** (Ryan), **Catalina Montealegre, V'07** (Ryan), and **Kimberly Harmon, V'07** (NBC).

Gretchen Wolf Swartz Award for Outstanding Nursing at NBC: **Ashley Lester**.

SCAVMA Commendation Awards: **James Morris**, large animal attendant; **Sarah Whealan**, curriculum coordinator; and **Richard Aucamp**, administrative director, gross anatomy laboratory (*not pictured*). ♡



Dr. Eric Birks



Ashley Lester



Dr. William Culp



Kasey McCafferty



Dr. David Diefenderfer



Catalina Montealegre



Dr. Kenneth Drobatz



James Morris



Jonathan Foster



Dr. Siobhan O'Neill



Dr. Robert Gilley



Dr. Tom Parsons



Kimberly Harmon



Dr. Diana Short



Dr. David Holt



Sarah Whealan



Dr. Olena Jacenko



Dr. Kathryn Wotman



Dr. Jean-Pierre Saint-Jeannet



Emily Zugg

Photos by Sabina Louise Pierce



Ribbon-cutting at the dedication for the Vernon and Shirley Hill Pavilion, November 3, 2006. Penn President Amy Gutmann (second from right) joined the Hills (center) for the building's ribbon-cutting event with their dog, Duffy, Dean Emeritus Alan M. Kelly (right) and Dean Joan Hendricks (left). Photos by Candace diCarlo.

## *The Vernon and Shirley Hill Pavilion Penn Vet's New Teaching and Discovery Center*

Penn Vet's new teaching and discovery building, the Vernon and Shirley Hill Pavilion—the first addition to the School's West Philadelphia campus in 25 years—opened with a gala honoring donors Vernon and Shirley Hill, on November 3, 2006.

In October 2005, Vernon and Shirley Hill made a transforming \$10-million gift to Penn Veterinary Medicine, the largest ever received by the School from a living donor. The Vernon and Shirley Hill Pavilion is the new academic center of the School of Veterinary Medicine. It includes the

latest technologies, enhancing the interaction between Penn Vet faculty and students. From state-of-the-art lecture halls and seminar rooms to wireless networking on the first and second floors, the building hosts a variety of innovative technologies. Lecture halls have integrated communications, media and Internet-based networks for digital collaboration and interactive presentations.

Vernon Hill II, W'67, is founder and chairman of Commerce Bancorp, Inc. Shirley Hill is founder and president of InterArch, an architecture and design firm in



“The attachment of the Hills’ name to Penn’s School of Veterinary Medicine will exemplify the exceptional talent that the School produces for the world.”



Mt. Laurel, N.J. The attachment of the Hills’ name to Penn’s School of Veterinary Medicine will exemplify the exceptional talent that the School produces for the world—individuals who are compassionate, innovative, entrepreneurial, successful and committed to improving the health and well-being of humans and animals alike. ▀

## *The Steven W. Atwood Library and Information Commons: Library Without Doors*

The Steven W. Atwood Library and Information Commons got its name from a very special relationship between a veterinarian and his client—or, more precisely, because of a Penn Vet alumnus and a dog owner on a small island off Massachusetts. For many years, **Dr. Steven Atwood, V’80, M.D.**, had counted among his patients this woman’s dogs, from the early days when he had practiced on Nantucket Island and later when he settled on Martha’s Vineyard (she moved to the Vineyard just so her animals could continue to be treated by Dr. Atwood). When he approached the client about focusing her support and generosity to Penn Veterinary Medicine, the suggestion was enthusiastically received. A bequest of \$2 million to the School—the donor wished to remain anonymous—was the result, with the condition that the library in the new teaching and discovery center, the Vernon and Shirley Hill Pavilion, would be the namesake of her favorite veterinarian, Dr. Atwood.

“I would say we all have clients who are special. In some cases, we’re aware of their financial circumstances and their potential to help Penn,” said Dr. Atwood. “When you believe in something, it’s really not hard to convey that enthusiasm to a potential client/donor in a positive way—not only for the School, but for veterinary medicine, for animals, for biomedical research, for comparative medicine. It’s an easy sell. Alumni should not be bashful in broaching the subject of a large gift to a special client; it’s a cause eminently worth supporting.”



Ribbon-cutting at the dedication for the Steven W. Atwood Library and Information Commons, January 5, 2007. From left to right: Dean Emeritus Alan M. Kelly, Penn Vet librarian Barbara Cavanaugh, Vernon Hill, Shirley Hill with Duffy, Dr. Steven W. Atwood and Dean Joan C. Hendricks. Photo by John Donges.

The Steven W. Atwood Library and Information Commons on the Hill Pavilion’s second floor includes an electronic classroom with 16 workstations grouped along a U-shaped table. Here students and faculty can attend workshops for database searching and presentation and bibliographic software. With students and faculty congregating in the library’s lounge, it takes a moment to realize something is missing: Atwood may be the first “library without doors.” ▀



# TRANSPLANTED TIME

## Extending the Lives of Cats through Kidney Transplant

BY SUSAN I. FINKELSTEIN

**Y**ou could say Jackie Miller, M.D., knows a little something about kidneys. As a pediatric nephrologist, Dr. Miller diagnosed and managed kidney disease and kidney function in children. She consulted with surgeons in cases involving kidney transplants, and helped manage dialysis procedures. To become a specialist, she had spent the better part of a decade in medical training, particularly studying the development of the kidneys and urinary tracts in children.

As a patient with end-stage renal disease herself, Dr. Miller underwent a kidney transplant 18 years ago, and immunosuppressive medications and regular follow-up visits to her own nephrologist will be part of her routine for the rest of her life.

So it almost came as no surprise, around Christmastime last year, when Jackie's cat Speedy was diagnosed with chronic renal failure—and that a kidney transplant was her best chance for survival. As a client at the Matthew J. Ryan Veterinary Hospital, Jackie (now researching vaccines at GlaxoSmithKline) learned firsthand the process by which veterinary surgeons select, prepare and perform kidney transplants in cats. In keeping with this Miller medical motif, Speedy became the ninety-sixth patient to receive a new kidney through Ryan's Feline Renal Transplant Program (courtesy of donor Hammy). Truly, for Jackie, Penn Vet's trademark—*Many Species, One Medicine*—had come full circle.

### Functioning and Failing

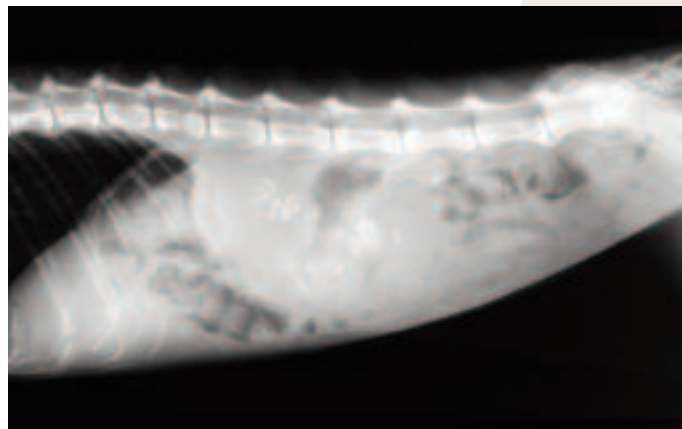
More than 1.2 million people worldwide suffer from end-stage kidney disease, and about seven percent more will be diagnosed every year, according to the National

Kidney Foundation. Just as dismal, the number of kidney failure patients in the United States is predicted to double in the next 10 years, influenced in part by diseases associated with an aging population such as diabetes and high blood pressure.

And as we humans live longer and develop age-related health problems, so too do our pets. Kidneys in both



Dr. Lilly Aronson (left) and Dr. Jackie Miller, respectively holding Hammy (donor) and Speedy (recipient). Sitting for this photo was the first time the two cats had met. Photo by Lisa Godfrey.



Radiograph of a cat with kidney stones

people and animals act as the body's filters to cleanse the blood of waste products. They take in blood, filter it and produce urine for excretion. They also help regulate blood pressure and calcium levels. When the kidneys fail, toxins are released into the body and, if untreated, death occurs.

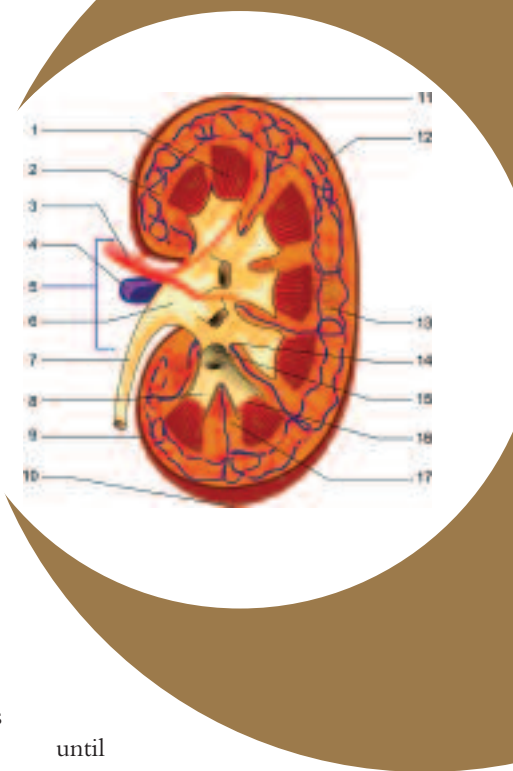
Kidneys can go into two kinds of failure, acute and chronic. Acute renal failure (ARF) is a serious condition usually with a sudden onset and often triggered by a particular event—for cats, ingesting lilies or antifreeze is potentially lethal. ARF commonly is treated with intravenous fluids and other medications and, if the animal survives the initial crisis, much or sometimes all of its normal kidney function can be regained.

Chronic renal failure (CRF) also may appear very suddenly and require intravenous treatment, but unlike ARF it is an ongoing disease in which kidney damage is irreversible; the goal is to keep the remaining function as long as possible. CRF is seen most often in older pets; cats and small dogs may show early signs of kidney failure at 10 to 14 years of age, but large dogs can experience it much earlier. This type of kidney disease can arise from a wide variety of causes, including hereditary/congenital abnormalities, bacterial infections, inflammation of the internal structure of the kidneys, cysts within the kidney, and urinary tract blockages such as kidney stones. Some cases are acute on chronic; for instance, a cat with CRF that acutely obstructs with a kidney stone.

In most cases of renal failure, treatments aimed at alleviating the symptoms are usually the first course of action. No cure exists for chronic renal failure, but for a time it can be managed via intravenous and subcutaneous fluids, changes in diet, medication and hemodialysis. If and when these therapies are ineffective, another option can be considered—and here is where this remarkable story inside the Ryan Veterinary Hospital really begins.

## Double Bonus

Penn Vet has a habit of bringing its own back into the fold, and **Dr. Lillian R. Aronson, V'92**, assistant professor of small animal surgery, is no exception. After graduation and an internship at Penn Vet, Dr. Aronson was accepted for a three-year surgical residency and one-year lectureship at the University of California, Davis, where she became interested in kidney transplantation. Under the tutelage of Dr. Clare Gregory, considered a pioneer in the field, she coordinated UC-Davis's renal transplant program



### Structures of the mammalian kidney:

1. Renal pyramid
2. Interlobar artery
3. Renal artery
4. Renal vein
5. Renal hilum
6. Renal pelvis
7. Ureter
8. Minor calyx
9. Renal capsule
10. Inferior renal capsule
11. Superior renal capsule
12. Interlobar vein
13. Nephron
14. Minor calyx
15. Major calyx
16. Renal papilla
17. Renal column

until 1996. A

year later,

Dr. Aronson moved back to Philadelphia—bringing along her newly acquired expertise—and by 1998 Penn had its own fledgling Feline Renal Transplant Program. Today, Ryan is the only teaching hospital on the East Coast that performs kidney transplants—and Dr. Aronson estimates that the Ryan transplant team will celebrate its one-hundredth transplant, literally, any day now.

Dr. Aronson emphasizes that the program is hardly hers alone, and only possible through the efforts of a consortium of specialists from across veterinary disciplines. “Each case wouldn’t work without a team of people; in anesthesia, surgery, critical care, nurses and other surgeons. Each case really has three surgeons involved—and the whole team makes it go very well and smoothly,” she said.

The transplantation process actually begins very early on, starting with the initial assessment of the cat’s kidney disease, as well as the owner’s willingness to bear the burden of frequent visits, expensive bills and years of administering daily medicine to the animal. (For reasons related to dogs’ immune systems, and the greater expense of medicating a much larger animal every day for potentially years, Ryan’s renal transplant program focuses on cats.) One way Dr. Aronson determines her clients’ suitability for the program is their desire to bring home two cats instead of one; the owners must agree to adopt the donor cat, or the deal is off.

"Part of the screening process happens before I even talk with the clients," Dr. Aronson explained. "I probably don't hear from those people who say to their referring vet, 'Oh, we're not interested in the donor.' They absolutely must adopt the donor, or it's just not going to happen. And we follow the donors for the rest of their lives to make sure they have good homes."

So who are these donors anyway?

A donor cat can be selected from those in the recipient's household or, more commonly, from cats currently living at the Ryan Veterinary Hospital that have come from shelters or research colonies. Dr. Aronson is working with the SPCA in York, Pennsylvania, to adopt more cats, potential donors that likely would otherwise be destroyed. It's a sad fact of today's animal shelters, one that Dr. Aronson is all too familiar with. "When people go to shelters, they see the cute little kitten and that's the one they want. They don't necessarily want the one- or two-year-old cat; those are the ones that often get euthanized, so those are the ones I would love to adopt into our program," she said. With Ryan's Feline Renal Transplant Program, for every cat that gets a new lease on life through a kidney transplant, so does another through its rescue from the pound.

### Gifts in Kind

Deciding which cats are ideal candidates for kidney transplants—and when to do them—can be a tricky business, but there are some standard guidelines. "Many people ask about the right time to intervene, and that can sometimes be hard to answer," Dr. Aronson stated. "Probably the best time to intervene is when the patient is starting to fail medical management—losing weight, becoming more

anemic, more azotemic [accumulating waste products in the blood] in the face of medical therapy. Having said that, I have

intervened sooner in some cases, and much later in others. I think a key to success is that no other disease processes are going on." An animal's age historically has not been a factor, either: the oldest cat that has been transplanted was 18. Generally, transplantation is not performed as an emergency or "last ditch" effort; transplants performed on inappropriate candidates usually do not have good results. Some patients also may need hemodialysis to stabilize them prior to the transplant.

The donor should be a healthy, young, FeLV/FIV-negative adult cat, preferably the same size or a little larger than the recipient. Donor and recipient should be matched by blood typing. And, of course, tests should confirm that the donor has two normal-shaped healthy kidneys. Unlike the recipient, which requires life-long medications to suppress its immune system so that its new kidney is not rejected, no special, long-term care is necessary for the donor.

"I tell my clients that they're going to have the same number of kidneys in their house, just distributed differently," Dr. Aronson joked as she explained that, in the majority of cases, the recipient's native kidneys are left in as "back-ups" should the donor kidney fail. Most transplanted kidneys are functioning well by 72 hours after surgery—at this point, the recipient's condition will have dramatically improved. (Re-transplantation is very rare, performed only in situations where a clot has developed in the renal artery or the graft breaks down from its surgical site and twists—both very uncommon conditions.)

The transplant procedure, lasting about four to six hours, involves two surgical teams operating on both cats simultaneously. After removal, the donor's kidney must be transplanted into the recipient—in the lower abdomen next to the bladder—in less than an hour, to minimize its time without a blood supply. The ureter from the donor's kidney is attached to the bladder, and the new kidney is connected to the recipient's blood vessels.

The work is painstaking, requiring an operating microscope to magnify cats' tiny veins, arteries and ureters. For an idea of scale, the feline renal artery measures only about two millimeters around (less than a tenth of an

inch). To stitch it to another artery, Dr. Aronson must use an enormous surgical microscope suspended above the patient, with dual eyepieces for her and her assistant.

The sutures are brought into view, but Dr. Aronson's eye-hand coordination must be re-established; seen



Oli, the donor (left), and Mr. Moto, the recipient





Surgeons operate at two workstations simultaneously to quickly move the kidney from donor to recipient.

through the eyepiece, the most delicate forceps appear as pliers.

### Making Time

In most cases, a kidney transplant buys clients more than a few extra months with their pets: the mean survival time at the Ryan Veterinary Hospital is close to four years, with some cats living eight years or more following transplantation. Presently, almost 94 percent of the cats leave the hospital, and 70 percent are alive one year out. “Anecdotally, if nothing seems to be an issue in the first six months after surgery—whether a rejection episode or problems with infections—and if the owners follow instructions about medications so the cats don’t develop problems like cancer or diabetes, then recipients tend to do well long-term,” explained Dr. Aronson.

When transplanted cats do die, it is most likely not from renal problems; continuous immunosuppression can bring out latent infections or cause tumors to form. “I would say only four or five that I’ve documented [since 1996] have gone back into chronic kidney failure,” Dr. Aronson said. In successful cases, the donor can join its new family after surgery in just a few days; its life

expectancy is no less than that for two-kidneyed cats. The remaining kidney enlarges to provide about 75 percent of the total function of two kidneys. Longer hospitalization is needed for the recipient, but a normal, active life with virtually no restrictions—and a new friend, to boot—can be expected.

### “A Potpourri of Knowledge”

Ryan is a university teaching hospital, and as such offers a rich array of cases from which future veterinarians can learn. The students and residents who assist doctors in the Feline Renal Transplant Program are on each case from scrub-in to discharge and beyond. In addition to her duties as surgeon, Dr. Aronson is also an educator. “It’s not like our other surgery cases, where students come in, assist with the case, and then the case is discharged within a few days—students on these cases follow the cats for a long time,” she said. “The transplant cases are often in for at least two weeks, and so there is a good opportunity to learn about renal physiology and the medical aspects of kidney disease. They learn about client communication. They definitely get a good potpourri of knowledge: internal medicine, surgery and, post-operatively, critical care

management.” She also lectures to the third-year elective surgery class and the students’ Feline Club, and almost every year presents at the Penn Annual Conference.

The best teachers drive themselves to be continuous learners, and Dr. Aronson is still finding knowledge in healing animals and educating students. A recent transplant case involved Cleo, an Abyssinian cat with amyloidosis, a rare disease marked by abnormal protein buildup in various organs that can cause permanent damage. “We never had a cat with amyloidosis before,” she explained. “The cat’s creatinine and numbers were all normal, so my thought was that if we just transplant the cat, we might not be fixing the old problem. We really had to take out *both* its kidneys.” Because Cleo’s protein level was so low, fluid had built up in the chest and abdomen, and she was having a lot of difficulty breathing. In addition, she needed her chest tapped multiple times. After consulting with physicians at the Hospital of the University of Pennsylvania, Dr. Aronson’s sense of what should be done was confirmed. But removing two kidneys of an otherwise normal cat was “disconcerting,” and the outcome unsure. Cleo been flown up from Florida, and her owners asked their referring veterinarian to make the trip to Penn—euthanasia solution in his bag—in case the worst happened. Within days after the transplant surgery, both native kidneys having been removed, Cleo’s proteins had normalized completely. To show their appreciation, Cleo’s owners made a gift to the Ryan Veterinary Hospital that helped the renal transplant program purchase a new microscope.

### Where Sciences Meet

Experimental kidney transplants in animals were first performed in 1902 at the Vienna Medical School, and in 1954, myriad medical advances had made possible the first kidney transplant operation on identical 23-year-old human twins in Boston. Thirty-three years later—in 1987—kidney transplants for the first time were used to successfully treat end-stage renal disease in cats at UC-Davis. For both animal and human patients, however, problems remained in preventing the recipient’s immune system from treating the new kidney as a foreign body and subsequently rejecting it. Powerful immunosuppressive drugs like cyclosporine and prednisolone have proven effective in staving off rejection, but they impair the ability of the recipient to resist infection—both new diseases and

activated latent ones. “Additionally, these patients are more prone to the development of cancer,” stated Dr. Aronson.

“The most common cause of morbidity and mortality in humans and cats that have received transplants is complications associated with long-term immunosuppression,” she continued. Within six months of beginning transplants at Penn, two of Dr. Aronson’s first 20 recipient cats died of pneumonia after a reactivation of latent toxoplasmosis (caused by the parasite *Toxoplasma gondii*). Dr. Aronson and **Drs. Christopher Hunter**, professor of parasitology, and **Nicola Mason**, assistant professor of medicine, are now collaborating to study newer immunosuppressive therapies in vitro. They are looking at some therapies being used in people that are more specific to the transplant site, rather than the systemic immunosuppression that occurs with traditional post-transplant drugs. This way, doctors can prevent organ rejection, while still allowing their patients to respond to potentially life-threatening infections. Published papers of the team’s work conclude that the results of their research should bring about in vitro and in vivo studies in humans and other animal models.

But today, for people like Dr. Jackie Miller, the intersection of veterinary and human medicines has never been keener—or more personal. As she and Speedy take their respective daily medications, each can be unwittingly benefiting from the knowledge their doctors are gaining not only through research, but also during their post-transplant, long-term recoveries. ■



Leo, the first kidney recipient at the Ryan Veterinary Hospital

For more information on the Penn Vet Feline Renal Transplant Program, please visit [www.vet.upenn.edu/catkidneytransplant.html](http://www.vet.upenn.edu/catkidneytransplant.html).

For more information on the recent pet food recalls, please visit [www.vet.upenn.edu/nutrition](http://www.vet.upenn.edu/nutrition)



# The Ballad of Joey and Jamie

*The following was written in March 2007 by Tony Rodgers and Mary Jane Cullin, clients of the Ryan Veterinary Hospital whose cat underwent a kidney transplant at Penn Vet. Tony and Mary Jane were so appreciative of the care and expertise they received, they made a gift that enabled the Feline Renal Transplant Program to purchase a new video system.*



Tony Rodgers, with his cat Joey, the recipient

**W**e met Joey on a trip to the Massachusetts SPCA in October 1991, a month after losing our Bernie to kidney disease at the age of 18. We had no plans to adopt another cat—just to warm our hearts with a trip to the shelter. Then Joey reached his paw through his cage, begging to be picked up. The thought of him being left behind was too much to bear, and within minutes, he was on the way home with us.

When he was about 11 years old, Joey was diagnosed with early-stage chronic renal failure. We were familiar with kidney disease because of Bernie's long battle, and it was painful to realize Joey would face the same sad end.

By chance, we found out that renal transplant was an option while scouring the Internet for support. Our local vet clinic did not offer such advanced procedures; the hospitals that did were in New York, Philadelphia, the Midwest and California. Since Mary Jane was working in Philadelphia at the time, we decided to try Penn.

Joey had his first appointment at Penn Vet in summer 2003.

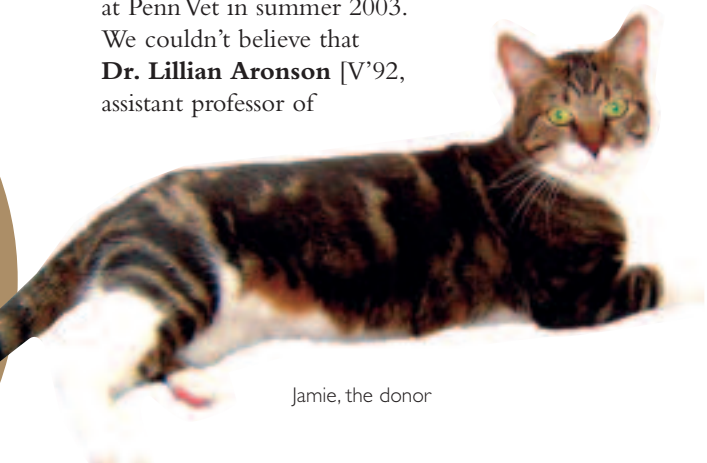
We couldn't believe that **Dr. Lillian Aronson** [V'92, assistant professor of

surgery]—that same nationally recognized superstar, with her incredible career dedicated to feline renal transplants—was seeing Joey! Alicia Preston [a renal transplant nurse then at Ryan] and **Dr. Dottie Brown** [assistant professor of surgery] pre-screened Joey, and we knew immediately that Penn Vet was where we wanted to be—it's just the feeling you get being there. It is a wonderful place.

Joey was not sick enough to have the transplant then, but we were comforted that he would be considered as a candidate. We made Joey look sweet and kept him in a good mood, as he can be demanding. We brought toys and toothbrushes to the appointments; he loves to rub his nose on toothbrushes and it seems to calm him.

After that first appointment, Joey was put on subcutaneous fluids, and his progress monitored to catch any serious fall-off in his kidney function. He had check-ups every couple of months at the MSCP's Angell Animal Medical Center in Boston by renal specialist Dr. Chris Rollings, who once had worked with Dr. Aronson at Penn Vet.

With Dr. Aronson's guidance, we weighed the decision to do the transplant against the possible risks. We knew as soon as the kidney disease began to interfere with his quality of life or if he was reaching end-stage failure, he would be operated on immediately. I was amazed at the care, support and patience we were given by Penn Vet staff over those many months of considering the options. It was a labor of pure dedication and love on their part.



Jamie, the donor



In summer 2005 we knew it was time. Joey had maintained well on the fluids for almost two years. But he now was very thin, slept most of the time and wasn't enjoying his normal routine. He was fading away in front of our eyes, and we were not willing to deprive him of the chance to live as robustly as possible. In November, we made the transplant appointment, and drove to Philadelphia the first week of December.

It's hard to describe Lillian Aronson: she has a serene, ethereal presence, incongruous with her down-to-earth nature. As much as we were taken with her medical knowledge, we were overwhelmed by her compassion for both patients and owners. Our respect for her abilities was equaled only by our appreciation of her warmth and caring. We met the doctor, but we fell in love with the person.

The real surprise about the renal transplant program involves the most obvious hero of the story, the kidney donor cat, who is required to be adopted into the family post-transplant. Before Joey's operation, **Jamie Meyer** [renal transplant nurse] introduced us to Ryan's donor pool. All the cats were wonderful, so we asked Jamie to choose. She was smitten with one who had been in the program over a year. He was such a "love bug," as they called him, you'd swear you saw little cartoon hearts popping from his eyes! We fell so hard for him that, out of gratitude, we named him Jamie.

The last part of the story is YoYo, another transplant-program donor we took home. When Joey was in recovery after the transplant, Tony spent time outside his cage to keep him company (with toothbrush, naturally). The transplant scheduled after Joey's involved YoYo as a donor, but during surgery he was deemed unsuitable to donate. Tony got to know YoYo as he recovered in Joey's ward over the next few days, and we were told YoYo would be put up for adoption. Of course, we said not to bother; he was coming home with us! So that's how we ended up with two Penn Vet transplant program kitties instead of just the donor.

We both wanted to give to Penn Vet because of the gift of life given to Joey by everyone involved in the renal transplant program. We felt fortunate to have found Dr. Aronson, so it was easy for us to want to give something back to her and the Hospital, whose staff truly love animals and understand what they mean to their owners. We wanted to express our gratitude and help other animals suffering from kidney disease. Our gift was personally fulfilling because it gave us a way to be a small part of Dr. Aronson's program. In the long run, it is truly a healthy thing to give a little back when you've received so much.

—TONY RODGERS AND MARY JANE CULLIN

## JULY 2007

### July 16

**6:30 p.m. to 8:30 p.m.** – Penn Vet Alumni Reception  
The 144th AVMA Annual Convention  
*Washington Convention Center, Washington, DC*

## AUGUST 2007

### August 18

**6:00 p.m. to 7:00 p.m.** – Penn Vet Alumni Reception  
The 125th PVMA Annual Scientific Meeting  
*Hershey Lodge and Convention Center, Hershey, PA*

## SEPTEMBER 2007

### September 7

**2:00 p.m. to 4:00 p.m.** – Veterinary Medical Alumni Society Executive Board Meeting  
*Vernon and Shirley Hill Pavilion, Philadelphia, PA*

### September 8

**All day** – Third Annual Carnivale of the Dogs, with Commerce Bank, Penn Vet will host a M\*A\*S\*H\* Tent and "Ask the Vet" booth  
*Rittenhouse Square, Philadelphia, PA*

### September 29

**All day** – Parents & Partners Day  
*Philadelphia and New Bolton Center*

## OCTOBER 2007

### October 19

**Evening** – Rush Shippen Huidekoper Society Dinner  
*Philadelphia*

### October 27

**Evening** – Alumni Reunion Dinner  
*New Bolton Center, Kennett Square, PA*

## NOVEMBER 2007

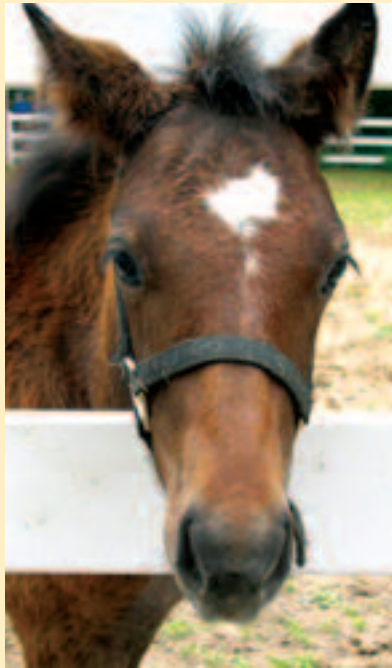
### November 2 to 4

The Fourth International Equine Conference on Laminitis and Diseases of the Foot  
*Palm Beach County Convention Center, West Palm Beach, FL*

For information, please visit  
[www.laminitisconference.com](http://www.laminitisconference.com).

## Cloud's Promise, a.k.a. Maverick Born 2005

**M**averick, a one-and-a-half year-old Quarter Horse cross, was brought to New Bolton Center on January 3, 2007, after having been rescued by Amy and Dan Oliva the previous March while waiting to be loaded onto a slaughter truck. He appeared to have an injury in his left hind leg that was affecting his hoof. After a growth spurt in the summer of 2006, Maverick's back leg became extremely lame and his hoof



Maverick as a young horse. Courtesy of the Amaryllis Farm Equine Rescue.

began to roll over, causing him to eventually walk on his coronary band. The Olivas' local veterinarian and farrier were very surprised with the speed of Maverick's hoof change and recommended he be brought to New Bolton Center for evaluation. Upon arrival at the George D. Widener Hospital for Large Animals, attending veterinarians **Drs. Liberty Getman, David Levine** and **Steven Zedler** confirmed a club-foot deformity and recommended surgery. Maverick was admitted, and had a deep digital flexor tenotomy performed at the level of the pastern under general anesthesia. Corrective shoeing (with a toe extension) was initiated in an attempt to stretch the rest of the leg's soft tissues. The surgery was successful, and an immediate change in his deformity was evident. "We don't see horses with deformities this severe very often anymore," said Dr. Getman. "They used to be more common, but nowadays there are medical treatments usually used early on to prevent the deformity from becoming this severe." ■

## Penn Vet Collaborates with WoodsEdge Wool Farm on New Research

**P**enn Vet's Department of Clinical Studies at New Bolton Center began collaboration with WoodsEdge Wool Farm in Stockton, N.J., in new research projects on clinical evaluation of pregnant alpacas. The School pioneered the studies on clinical evaluation of pregnancy in mares, and recently **Drs. Leonardo Brito** (reproduction lecturer), **Patricia Sertich** (associate professor of reproduction), **JoAnn Slack** (assistant professor of cardiology/ultrasound) and **Lauren Greene** (reproduction resident) began clinical evaluation of pregnancy in camelids. With camelids only producing one offspring per year, problems that arise during gestation that may put the pregnancy at risk can have a serious economic impact on the breeder. In humans and other domestic species, especially horses, significant developments have allowed doctors to recognize problems and develop successful treatment strategies for abnormal pregnancies, thus increasing the likelihood of fetal survival.



With this research, Dr. Brito hopes to make information available to alpaca owners and their veterinarians to maximize the number of live healthy newborns. According to Dr. Brito, one reason Penn Vet chose WoodsEdge was because of its 20 years of data collection on camelid reproduction parameters, with 16 years under the supervision of the renowned equine theriogenologist Dr. Dean Neely. ■

## ALPACA FACTS

- Female alpacas generally weigh approximately 110 to 150 pounds. Male alpacas weigh approximately 140 to 180 pounds. Some alpacas can weigh over 200 pounds. Alpacas are native to South America.
- Alpacas come in 16 colors. Their fleece—lighter, softer and warmer than wool—is prized by designers like Ralph Lauren and Dolce & Gabbana, who use it for hats, scarves and gloves.
- An alpaca pregnancy lasts approximately 11 months. Female alpacas are called hembras, males are called machos, and babies are crias. Multiple births are rare.
- In South America, alpacas live five to 10 years. However, without major predators and with better nutrition and daily care, the North American alpaca can live into the late teens or early twenties.

BY SUSAN I. FINKELSTEIN

**H**e was called Bones after being discovered wandering, an emaciated 11-month-old puppy, onto a Missouri farm five years ago. That's when Sandy and Bob Owens, in Haverford, Pa., received a call from a friend whose property neighbored the land where the German shorthaired pointer was found. The dog needed a home—fast—or he would be shot; animal shelters were nonexistent in this remote, rural area, and that particular farmer had no desire for a dog. Two days and one trip to the airport later, the gangly pup had a new name and a new home: with the Owenses, Zeke had finally found his niche.

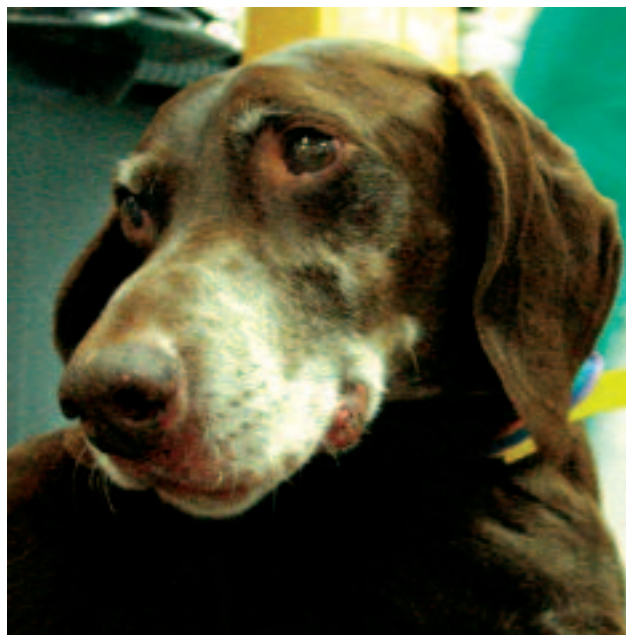
In his previous life, Zeke clearly had been mistreated. He was afraid of sudden movements or sounds. On trips away from the Owenses' four-acre property, he would become anxious and try to return home. His new owners had hopes of growing Zeke into a first-class bird dog, but when a shotgun was shown to him, he looked at it, dropped his tail and ears and ran to his doghouse. When

“ A new type of tissue engineering — using a substance called bone morphogenetic protein — would provide the best outcome. ”

introduced to game birds, Zeke had a very good nose, but seemed to be afraid of getting in trouble—smelling the bird, starting to point, then “blinking” or skirting away with his tail down. “We believe he was taken to the field when young, introduced to hunting with mistreatment and left in the country either deliberately or by accident,” Bob Owens said.

Finally, after much careful and gentle training, Zeke's self-confidence grew, as did his willingness to join in the hunt. A sweet-natured dog, he soon was given the run of the house and property (surrounded by an invisible fence). All was progressing well as Zeke settled into his role as helper and loving pet.

Then, one day in late August 2006, a power outage caused by work done at a neighbor's house caused an



Zeke

alarm to sound at the Owens' residence. A police officer responding to the call was taken off-guard by Zeke and, mistakenly believing himself to be in danger, fired his gun at the dog, hitting him once in his lower right jaw and once in his left shoulder. Stephanie Novak, pet-sitting for the Owenses while they were out of town, had been called when the alarm was reported, and immediately headed out to the Owens house. She arrived shortly after the shooting, grabbed Zeke, rushed him first to his local vet, then to Penn Vet, “saving his life,” Bob Owens recalled.

## The Fight to Save Zeke

When Zeke first presented at the Ryan Veterinary Hospital, **Dr. John Lewis, V'97**, assistant professor of dentistry and oral surgery, happened to be in Ryan's Emergency Service consulting on another patient. Dr. Lewis remembered that “blood was pouring out” of the dog's mouth—in fact, Zeke almost bled to death. Packed red blood cells and other blood products were provided to the dog from Penn's Animal Blood Bank. Cardiology resident **Dr. Steven Cole**, who was working E.S. that day, intubated the dog to protect the airway and provide anesthesia, and Dr. Lewis assisted the emergency team in locating and ligating the bleeding artery. Under anesthesia, Zeke was brought to the Radiology Service for a CT scan before surgery, where doctors noted that the area of injury to the jaw was comminuted (nearly pulverized) and rid-



dled with bullet and tooth fragments. Zeke also sustained soft-tissue injuries, including damage to the right side of the face, underside of the tongue and the muscle over the left shoulder. (**Dr. David Holt**, chief of surgery and professor of surgery, explored the gunshot wound to Zeke's shoulder and removed lacerated tissue from that area.)

Zeke also exhibited some uncharacteristic bleeding from lesser wounds in his mouth; he had anesthetic complications of arrhythmias and pressure problems, so the surgeons quickly removed the severely comminuted segment of mandible, including pieces of tooth, bone and metal.

As a result of the wound, Zeke had a two-inch gap in his jaw; bone loss this severe is extremely hard to manage, often requiring a graft from the rib or hip bone—and even then it can be very difficult to heal. **Dr. Robert Gilley**, assistant professor of surgery, who managed the orthopedic surgical aspect of the case, consulted with Dr. Randy Boudrieau, a colleague at Tufts University in North Grafton, Mass., who specializes in this type of injury. The two agreed that a new type of tissue engineering—a technique using a substance called bone morphogenetic protein (BMP) to create bone from soft tissue around the defect—would provide the best outcome after the insertion of reconstructive plates in the jaw.

First, a mini-plate was placed along the dorsolateral surface of the lower jaw to maintain normal occlusion (rela-

tionship between the upper and lower jaws). Doctors then placed a larger, special locking plate in the region. The screws and plates not only screwed into the bone, but a separate set of threads locked into the plate itself to allow for increased stability especially for cases like Zeke's, where there is a gap to span in the bone. Then, a calcium-phosphate sponge was created to fit in the area of the bony defect, and this sponge was impregnated with BMP. The sponge acts as a matrix for bone cells to traverse the area, and the BMP recruits new bone cells to produce a callus in the area of the defect.

"I did my Ph.D. work with BMP and it is amazing how effective and quickly it forms bone," Dr. Gilley stated. "The only difficulty is that it is extremely expensive (about \$5,000 for one dose)." Wyeth Pharmaceuticals, which manufactures BMP for human use, donated the BMP for use in Zeke. In addition, Dr. Boudrieau traveled from Tufts with specialized instruments to help perform the surgery with Dr. Gilley and his team, which included Dr. Lewis, **Dr. Alexander Reiter** (assistant professor of dentistry and oral surgery) and **Dr. Mary Mesich** (surgery resident). Zeke became only the fifth clinical canine patient ever to have had mandibular reconstruction efforts using BMP.

Each time Zeke has been in for follow-up exams at the Ryan Veterinary Hospital, he has showed signs of consistent and speedy healing. In November 2006, Dr. Lewis reported on the pointer's status; he was doing well at home and new bone was being produced at an amazing rate, but he still had some cosmetic issues. "Due to the large callus forming at the defect site, he currently looks like Rocky Balboa," Dr. Lewis joked, "but this callus will remodel with time to provide function and a relatively normal appearance." In December, the callus had shrunk noticeably, and dental radiographs showed replacement of the calcium-phosphate sponge with bone.

Zeke has since visited Dr. Lewis for his 12- and 16-week post-operative rechecks, and the callus continues to become more consolidated. Zeke's occlusion continues to be perfect, and Sandy and Bob Owens are very pleased with his recovery. Zeke has even sneaked out with Bob for some hunting (not entirely with the blessing of his doctors at this early stage), and despite all he has been through, appears to show no signs of reverting to the gun-shy ways of his youth. 🐾



Drs. Lewis (center) and Cole (to Dr. Lewis's left) try to staunch the flow of blood shortly after Zeke's arrival at Ryan's Emergency Service.

## *Nonviable Embryonic Stem Cells Used to Create Tissue Transplants in Mice*

Two alternative sources of embryonic stem cells have been found to be effective at replacing adult tissue, which can be transplanted without the risk of rejection, according to Penn Vet researchers. The findings of a team headed by **Dr. K. John McLaughlin**, assistant professor of reproductive physiology at Penn's Center for Animal Transgenesis and Germ Cell Research, appearing in the February 15, 2007 issue of *Genes & Development*, detail how blood cells in mice are replaced with uniparental embryonic stem cells, generated either solely from unfertilized eggs or sperm from males.

Research has long shown that mammalian embryos inheriting both sets of chromosomes from one parent (uniparental) do not develop. While embryos with two sets of chromosomes from the mother (parthenogenetic) were previously considered a potential source of tissues for the female from which they were derived, this study shows for the first time that parthenogenetic cells can regenerate an organ in an adult mouse. An unexpected bonus was discovering that this could also be done with embryonic stem cells derived from sperm.

"It has been known for over a decade that uniparental cells had some capacity to form tissues in vitro and in vivo, but it was questionable if these embryonic stem cells could generate transplantable material that would proliferate and replace tissues in an adult," said Dr. McLaughlin.

There are several concerns in using these cells for transplantation as they cause abnormalities during development and are linked to malignant tissue formation. The transplant recipient animals from both egg and sperm derived uniparental cells were, however, healthy over a normal lifespan and with a normal range of blood cell types.

Compared to very low efficiency of deriving embryonic stem cells from clones in mice, the derivation of both androgenetic and parthenogenetic embryonic stem cells is more comparable to normal fertilized embryos. This approach, if translated to humans, could produce patient-derived tissue without the ethical and efficiency issues associated with therapeutic cloning.

Other coauthors of the study from Penn are **Dr. Sigrid Eckardt**, research associate, and **Adrian Leu**, research specialist, at the Center for Animal Transgenesis and Germ Cell Research.

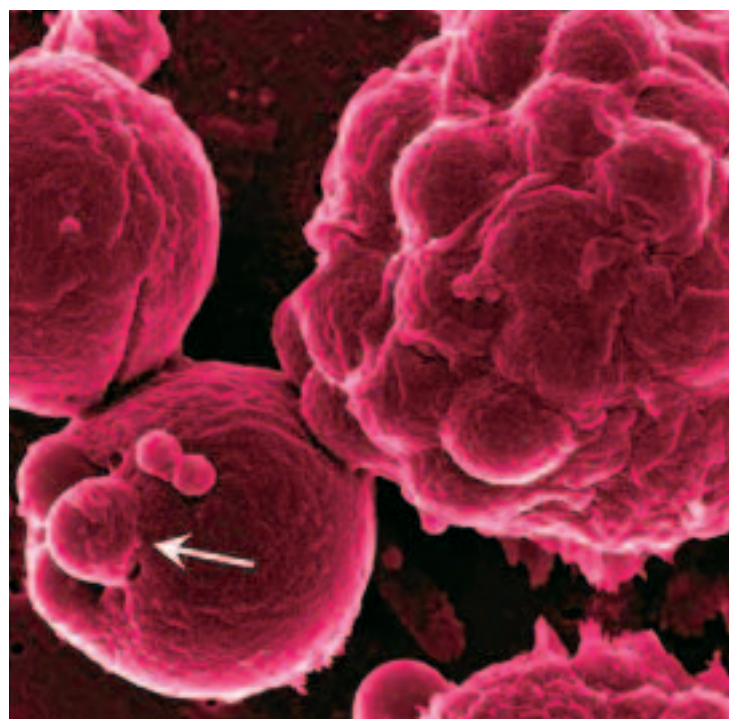
## *"Killer" B Cells Discovered; New Link in the Evolution of Immunity*

A unique evolutionary link between the immune systems of fish and mammals in the form of a primitive version of B cells, white blood cells of the immune system, has been discovered by Penn Vet researchers. Their studies link the evolution of the adaptive immune system in mammals, where B cells produce antibodies to fight infection, to the more primitive innate immunity in fish, where they found that B cells take part in phagocytosis (cell eating), the process by which cells of the immune system ingest foreign particles and microbes.

The finding, in the October issue of *Nature Immunology*, represents a sizeable evolutionary step for the mammalian immune system and offers a potential new strategy for developing much-needed fish vaccines.

"When examining fish B cells we see them actively attacking and eating foreign bodies, which is a behavior that, according to the current dogma, just shouldn't happen in B cells," said **Dr. J. Oriol Sunyer**, pathobiology professor. "I believe it is evidence for a very real connection between the most primitive forms of immunological defense, which has survived in fish, and the more advanced, adaptive immune response seen in humans and other mammals."

Despite the behavioral differences, the fish B cells likely represent a less advanced version of mammalian B cells.



The trout cell in the lower left is in the process of engulfing tiny latex beads (arrow). Dr. J. Oriol Sunyer; image taken with the assistance of R. Meade, Biomedical Imaging Core Laboratory of Penn's School of Medicine.

Dr. Sunyer found the very cellular structures that medical science has used to define B cells in humans to be present in fish B cells, which is why they are able to label them as B cells in the first place.

Funding for this research was provided by the National Science Foundation and United States Department of Agriculture.

## Friend or Foe? How the Intestine Keeps Us Safe From Microbial Invaders

How the immune system is switched on and off, or how it detects friend or foe, has baffled scientists for many years. New research from Penn Vet shows tiny intestinal epithelial cells play a central role in both turning on anti-microbial immune responses and turning off harmful responses that can cause chronic inflammation in the intestine. The researchers reported their findings in the February 25, 2007 issue of *Nature*.

“Our findings suggest that manipulating intestinal epithelial cell function could provide a method to improve the efficacy of oral vaccines or help treat inflammatory diseases of the intestine like inflammatory bowel disease or food allergies,” said **Dr. David Artis**, assistant professor of pathobiology and senior author of the study.

“The body’s intestinal immune system is continually exposed to the food we eat and harmless intestinal bacteria that help us digest that food. It is essential that immune cells do not react to food or harmless bacteria otherwise diseases like inflammatory bowel disease or food allergies can develop,” said Dr. Artis. However, following exposure to dangerous viral, bacterial or parasitic microbes, immune cells must respond and turn on the appropriate immune response to kill the microbe. “Our recent studies identify intestinal epithelial cells as critical cells in making friend-or-foe decisions in the gut,” said Dr. Artis.

Other participants in the study from Penn Vet included **Colby Zaph, Amy E. Troy, Betsy C. Taylor, Lisa D. Berman-Booty, Katherine J. Guild, Yurong Du, Evan J. Yost** and **Michael J. May**.

Funding for this research was provided by the National Institutes of Health, the Irvington Institute for Immunological Research, and the Crohn’s and Colitis Foundation of America’s William Shelby Modell Family Foundation Research Award. ▀

Log on to [www.vet.upenn.edu/research/students/researchday.html](http://www.vet.upenn.edu/research/students/researchday.html) to learn about our students’ research. Also, remember to read *Rosettes & Ribbons* on-line at [www.vet.upenn.edu/bellwether/rosettes.shtml](http://www.vet.upenn.edu/bellwether/rosettes.shtml).



## Chief Nurse at Ryan ICU Named Model Supervisor

The University presented its first Model Supervisor

Award to Penn Vet’s **Rosemary Lombardi, CVT**, nursing supervisor at the Intensive Care Unit of the Ryan Veterinary Hospital. The award presents outstanding supervisor behaviors to the campus, connects these behaviors to leadership goals, and recognizes an outstanding Penn supervisor each year. This once-in-a-lifetime honor is awarded to only one Penn supervisor per year. ▀

## Deaths

**Marsha Finkelman**, biomedical purchasing manager for the Ryan Veterinary Hospital, died November 27, 2006. She started working at Penn Vet in the late 1970s as an anesthesia veterinary technician. Ms. Finkelman was an organizer of the Academy of Veterinary Technician Anesthetists, and in 2003 was president of the Veterinary Technicians and Assistants Association of Pennsylvania. She was among the first to be granted official certification as a veterinary technician specialist in anesthesia.

**Dr. David Kritchevsky**, emeritus professor of biochemistry at the School of Veterinary Medicine, and one of the first scientists to study the link between cholesterol, cardiovascular risk and cancer, died November 20, 2006. From 1975 to 1991, Dr. Kritchevsky served as associate director of the Wistar Institute. He was president of the American Society for Nutrition in 1979.

**Charles E. Wismer, Jr.**, an overseer of the School of Veterinary Medicine from 1984 to 1988, died September 1, 2006. He also was an agriculture trustee at Pennsylvania State University from 1981 to 1987 and a former member of the Pennsylvania Pesticide Board. ▀



## 1960s

**1962 – Dr. J. Clyde Johnson** was recognized by the American Association of Equine Practitioners (AAEP) in December 2006 for his contributions to veterinary medicine. Dr. Johnson served on the AAEP board of directors, was the AAEP treasurer for five years and then served as an officer including the role of president in 1995. In addition, Dr. Johnson is a past president of the Vermont State Veterinary Board, the Vermont Veterinary Medical Association and the New England Veterinary Medical Association.

## 1970s

**1974 – Dr. Henry Werner** was inducted as vice president of the AAEP in December 2006. A 28-year AAEP member, Dr. Werner has chaired or served on numerous committees and task forces. He was a member of the board of directors from 1995 to 1999 and served as the AAEP treasurer from 1999 to 2002. He also is a past president of the Connecticut Veterinary Medical Association.

**1975 – Dr. John Cullen** has been named president-elect of the American College of Veterinary Pathology, the oldest specialty group in the AVMA.

**1975 – In August 2006, Dr. Raymond W. Stock** was presented with the 2006 Distinguished Veterinary Service Award by the Pennsylvania Veterinary Medical Alumni Society “in recognition of his steadfast commitment to the veterinary profession as a compassionate practitioner, an accomplished scholar and author, legislative advocate and devoted leader.”

**1978 – Dr. Gregory Bossart** was named senior scientist and head of pathology at the Center for Coastal Research and affiliate professor at the Department of Biological Sciences at Florida Atlantic University.

**1979 – Dr. Ella Boyd** was named public health coordinator of Ocean County, N.J.’s Health Department in October 2006. Prior to her appointment, Dr. Boyd had been the coordinator of the county’s community health services since 1993. She joined the department in 1991 as supervisor of the Ocean County Animal Facility.

**1979 – Dr. Joan C. Hendricks**, Penn Vet’s Gilbert S. Kahn Dean of Veterinary Medicine, was named the 2007 recipient of the Lenore Rowe Williams Award by the Penn Professional Women’s Network. The annual award is given to a distinguished female scholar or leader whose contributions extend within and beyond the University.

**1979 – In August 2006, Dr. Margaret Landi** was presented with the 2006 Veterinarian of the Year Award by

the Pennsylvania Veterinary Medical Alumni Society for outstanding achievement in veterinary medicine in the past year.

## 1980s

**1981 – Dr. Cynthia Albright** received an Animal Kingdom Kindred Spirit Award from the Doris Day Animal Foundation (DDAF) in August 2006. The DDAF began giving the annual awards in 2002 as a “way of saying ‘thank you’ to individuals who have shown extraordinary compassion or kindness toward animals, and to inspire others to follow their fine examples.” Dr. Albright works at Donegal Animal Hospital in Columbia, Pa. She specializes in dermatology, endocrinology and cardiology.

**1986 – Dr. Francine Mallon**, a full-time professor of veterinary science at Camden County College in New Jersey, was granted tenure there last fall.

## 1990s

**1990 – In August 2006, Dr. Robert Fetterman** was installed as president-elect of the Pennsylvania Veterinary Medical Alumni Society.

**1995 – In August 2006, Dr. Mary Bryant** was installed as the 125th president of the Pennsylvania Veterinary Medical Alumni Society.

**1995 – Dr. Ellen M. Dziedzicki** and her husband, Nathan Pownall, welcomed the birth of their daughter, Marian Elise Pownall, on February 9, 2007. Marian joins her brother, Alexander. Dr. Dziedzicki currently works in a mixed-animal practice in Warriors Mark, Pa.

**1995 – Dr. Derek Fried** married Dr. Jennifer Mei-Ling Tsung, MRCVS, on September 16, 2006. Dr. Fried is an owner of Riverdale Veterinary Group in the Bronx, N.Y. Dr. Tsung practices at the Animal Clinic of Bensonhurst in Brooklyn and at the Staten Island Veterinary Group.

**1995 – Dr. Doug Thamm** and his wife, Grace, welcomed the birth of their second son, Bennett, on October 26, 2006. Dr. Thamm is an assistant professor of oncology at the Colorado State University Animal Cancer Center.

**1996 – Dr. Sallie S. Hyman** and her husband, John Huckabee, welcomed the birth of their son, Tristan Peter Samuel Huckabee, on August 15, 2006.

**1997 – In August 2006, Dr. Lisa Murphy** was installed as vice president of the Pennsylvania Veterinary Medical Alumni Society.

**1997** – **Dr. Alisa Siceloff** and her husband, John, welcomed the birth of their son, Theodore Rex, on May 26, 2006. The family resides in Soldotna, Alaska.

**1999** – **Dr. Kristen Lohr Yucha**, and her husband, David Yucha, welcomed the birth of their daughter, Lauren Mary Yucha, on March 10, 2006.

## 2000s

**2004** – **Dr. Craig Liam Hopkins** married Laura Anne Stanton, a medical student at Drexel University, on September 30, 2006. Dr. Hopkins is a staff emergency veterinarian at Veterinary and Surgical Diagnostic Specialists in Clarksburg, N.J.

## deaths

**1935** – **Dr. William H. Waddell** on January 30, 2007.

**1942** – **Dr. Herbert Richman** on September 6, 2006.

**1944** – **Dr. Kenneth E. Diehl** on August 2, 2006.

**1947** – **Dr. Robert Schwarzmann** on December 20, 2006.

**1949** – **Dr. George W. Fisher** on November 19, 2006.

**1950** – **Dr. Wilbur S. Bull** on November 10, 2006.

**1950** – **Dr. Richard C. Newsham** on September 5, 2006.

**1951** – **Dr. John Patt** on August 31, 2006.

**1951** – **Dr. Donald E. Peck** on April 12, 2006.

**1953** – **Dr. William A. Truban** on February 3, 2007.

**1954** – **Dr. Robert D. Flowers** on January 11, 2007.

**1954** – **Dr. Fred D. Hagerty** on January 26, 2007.

**1967** – **Dr. Alonzo Edmiston, Jr.** on February 21, 2007.

**1971** – **Dr. Joseph R. Tuckosh, Jr.** on December 12, 2006.

**1982** – **Dr. Clifford F. Wright, Jr.** on February 21, 2007.

**1985** – **Dr. Bruce E. Laidig** on March 15, 2007.

## Alumni Connections

Are you familiar with Penn's On-Line Alumni Community? It provides a free service to all Penn graduates that allows you to find a former classmate, sign up for an email forwarding service and update your alumni record.

As we reactivate the class agent program, you can register and update your contact information by visiting [www.alumniconnections.com/olc/pub/UPN](http://www.alumniconnections.com/olc/pub/UPN).

Once registered, you can search the On-Line Directory networking and an easy way to keep up-to-date on fellow alums. The permanent email forwarding service will forward messages received at your permanent Penn e-mail address to the one of your choice.

Another way to reconnect with Penn Vet and classmates:

Take advantage of the Penn Vet Alumni Society's new electronic communications system, a listserv, by which you can keep in touch with your classmates. The listserv is free and your privacy is ensured. Take advantage of this service by sending your preferred e-mail address to [haggertc@vet.upenn.edu](mailto:haggertc@vet.upenn.edu), or call 215-898-1481 for details.

## Penn Vet Alumnus Named Dean of Cornell's College of Veterinary Medicine

In April 2007, **Dr. Michael I. Kotlikoff, V'81**, was named dean of the Cornell University College of Veterinary Medicine. At Penn Vet, Dr. Kotlikoff was professor and chair of the Department of Animal Biology and director of the Center for Animal Transgenesis and Germ Cell Research. He also held a joint appointment in the Department of Medicine at Penn Medicine. After moving to Cornell in 2000, Dr. Kotlikoff served as professor and chair of the Department of Biomedical Sciences. His laboratory is recognized in mouse genetics, cardiac and smooth muscle biology and cell signaling. Dr. Kotlikoff has led the way in efforts to understand complex physiological processes at the molecular level through the use of genetics, molecular design and advanced optics. Work from his lab has provided insights into heart development, injury and repair, and the molecular basis for abnormal muscle contractility.



Cornell University Photography. Photo by Robert Baker.

# Amos Stults, V'35, Remembers Days of Yore

BY NANCY WEST

Just two years ago, **Amos Stults, V'35**, retired after a remarkable 70 years of service to animals both large and small from his veterinary practice in Hopewell, N.J. Now 96, he is Penn Vet's oldest living alumnus. His memories of becoming a veterinarian at the end of the Great Depression would, quite literally, fill a book. In fact, he still has the weathered leather-bound logbooks of his field calls to local farmers and other clientele dating to 1937.

Dr. Stults became interested in veterinary medicine as a high school student while working at the Walker Gordon Dairy Farm in Plainsboro, N.J. "During the summer, veterinary students came to the farm as part of their education," Dr. Stults recalled. "After watching them work on the cows, I thought, 'If they can do it, I can do it.'"

## Memories of Penn

In 1931, he entered the School of Veterinary Medicine with only a high school diploma. "In those days, the School was desperate for students because of the Depression," he explained. "So if you showed any potential, they would accept you." Dr. Stults noted that only about half of the 54 students who started in his class graduated. His was the last class for which students were accepted without an undergraduate degree.

Tuition at that time was about \$250 per term, according to Dr. Stults, and most of the students had little or no money. Only one person in the class could afford a car. Most earned spending money by working in wait staff jobs provided through the University. These coveted jobs were passed down from one veterinary student to another each year. The entire veterinary school was housed in the city, with large animals brought into a large courtyard area, what now serves as the parking lot inside the Old Vet Quadrangle.

## Starting Out

After graduation, Dr. Stults bought his Hopewell veterinary practice. As part of the deal, he got a broken-down car, a little bit of medical equipment and a two-car garage, half of which served as his veterinary hospital. The previous veterinarian had died about four months earlier and most



Dr. Amos Stults (left) with his son, Dr. Bud Stults

of the business had disappeared in the meantime, so Dr. Stults had to rebuild the practice from scratch. Concentrating on large animals, he rode with the town's hardware-store owner on delivery runs around the farming community, introducing himself to the local farmers.

"There were 9,000 cows in Hopewell Township then," he remembered. Despite that, times were tough. "My first



month in practice, I had three calls and collected a total of \$9.00. We charged \$3.00 for a road call and \$1.00 for an office visit. When a call came in the middle of the night to deliver a horse or cow, we were darned happy because we needed the money,” he said, referring to both himself and his late wife, Dorothy, who helped him run the practice and handled the bookkeeping until 2000, when she was nearly 90.

During his first year of practice, he earned about \$34. To survive those very lean early years, Dr. Stults became involved with the New Jersey state government’s program to eliminate bovine tuberculosis and brucellosis, bacterial diseases spread in milk. To be accepted into the program, he had to work the first three months for no pay. After that, he received \$10 a day plus \$2 car-expense money for testing anywhere from 150 to 300 cows each day.

“Through this work, my dad and other veterinarians helped to eliminate these diseases in cows as well as humans,” noted his son, **Amos “Bud” Stults, Jr., V’73**, who joined his father in practice after graduating from Penn Vet. “My dad did this at great personal cost. One spring, he contracted brucellosis and had recurrences every spring after that, usually ending up in the hospital for a week. This was common among large animal practitioners at the time.”

Dr. Stults Sr. also suffered his share of broken bones. “You had to watch out for flying feet. We had little anesthesia for large animals in those days, so it wasn’t surprising that they kicked me,” said Dr. Stults, whose nose was broken several times.

Even the anesthesia available for small animals was crude at best. “For dogs, we made a cone of newspaper, saturated a cotton swab with ether, put it in the cone and pushed it over the dog’s nose. When the dog passed out, we took it off and regulated how much he inhaled,” he explained.

## Evolving with the Times

After World War II, Dr. Stults’s small animal practice grew. When gas rationing ended and people could travel more easily, more clients began to drive over from Princeton. Among his clientele were some notable people, including novelist Dashiell Hammett and the Lamberts of Lambert Pharmaceuticals, makers of Listerine®, who owned 14 great Danes and later, 12 Labrador retrievers.

“Our clients were all friends back then,” he said wistfully. “If you went to a farmer’s house and a calf was dying, you cried along with him. If they had a new baby, you celebrated with them. That sense of community has been lost over the years. It’s a different world today.”

Still, the practice Dr. Stults began in 1935 is thriving, with seven veterinarians on staff in a veterinary hospital that he designed and built himself about 30 years ago. The practice has evolved with the times and the local agricultural landscape, the primary focus shifting from large to small animals.

## Giving Back

Over the years, Dr. Stults and the practice he founded have contributed to the education of Penn Vet students in various ways. In the 1940s and 1950s, senior students rode with Dr. Stults to learn what a large animal practitioner did. “It was considered a highlight of their education,” Bud Stults related.

These days, Hopewell Veterinary Hospital helps students by sponsoring an Opportunity Scholarship. “I have a lot of respect for **Dr. [Charles] Raker [V’42]**

and others who were at Penn when I studied there,” said Bud. “They provided me with a great opportunity, and life has been very good to us. That’s reason enough to give something back.”

“The Opportunity Scholarship program is very well run, and it’s rewarding to see how our financial support is directly helping a student,” noted **Dr. Ray Hostetter, V’69**, who has

been in partnership with the Stultses since graduating from Penn Vet.

Hopewell’s first scholarship recipient was **Dr. Kristina Willoughby, V’06**, and they look forward to beginning sponsorship of another student this year.

Looking back over his 70 years in veterinary medicine, Dr. Stults is astonished at the changes he has seen. “When I first started, you couldn’t fix an animal that had a heart problem or anything very serious. It’s a completely different ballgame today. With modern technology and other new developments, you can do so much more to help animals, and that’s a wonderful thing.”

“With modern technology and other new developments, you can do so much more to help animals, and that’s a wonderful thing.”

# vmaspresident'sletter

**W**e kicked off our year with another successful Penn Annual Conference, February 28 to March 2, 2007 at the Sheraton City Center Hotel in Philadelphia. Close to 600 alumni among the 1,100 participants attended special pre-conference presentations by the Pennsylvania Veterinary Medical Association and PennHIP® and two full-conference days. Several of our own Penn Vet graduates presented top-notch educational programming and **Dr. Joan C. Hendricks, V'79, GR'80**, provided an abridged version of her State of the School address at our VMAS open meeting on March 1. We hosted a young alumni luncheon on March 2, which invited all class years from 2002 to the present. Even more alumni events will be incorporated into next year's Penn Annual Conference, March 5–7, 2008.

Be sure to mark your calendars for October 27, 2007 for Alumni Day at Penn Vet: 25th and 50th reunion classes will be highlighted at the day's events, but all classes are invited to join their classmates for a fun time. Look for more details in the coming months.

Summer will be here before you know it, and with it comes the opportunity for you to employ a first- or second-year vet student who is eager to “learn-and-earn” from you while gaining valuable experience. Please visit the Veterinary Employment Bulletin Board at [www.vet.upenn.edu/jobsearch](http://www.vet.upenn.edu/jobsearch). Click on the “Post a Summer 2007 Position” link, and complete the on-line submission form. Interested students will be able to view your announcement and contact you directly.

If you cannot offer an employment opportunity, perhaps you might care to share your career experience. Penn Vet is often asked to speak to community and school groups on careers in veterinary medicine. If you would like to share your veterinary experience with future veterinarians and community groups, contact Coreen Haggerty at 215-898-1481.



Even when not on campus, you can stay connected by visiting the Penn Vet Web site at [www.vet.upenn.edu](http://www.vet.upenn.edu), and clicking on the enhanced “Alumni & Friends” link. You may also post an e-mail message to your classmates through the Alumni Society's *free* electronic communications system. By logging onto this secure on-line community, you will be immediately connected to your entire class. To sign up, contact Coreen. If you are already a member of the listserv, type **vmdclassofXXXX@vet.upenn.edu** in the “To” box of your e-mail message to reach your classmates (simply replace the Xs with your class year.)

In closing, I remain confident that as alumni, we have much to offer and accomplish for our School. I encourage you to share your thoughts with me, or join us at the next event or Veterinary Medical Alumni Society meeting. Hope to see you at Alumni Weekend!

—MARILYN WEBER, V'75

## *AMVM opens veterinary museum*

The American Museum of Veterinary Medicine (AMVM) now has a permanent home, with the purchase of historic Ridgewood Farm, Berks County, Pennsylvania. The farm will once again focus on animals, and the profession that cares for their health and welfare.

The property includes a stone farmhouse, built in two sections, circa 1740 and 1811, a rare 1809 double bank barn, a smoke house, wagon shed, root cellar and other outbuildings that will be adapted to museum use.

“Ultimately we envision the AMVM to be known throughout America for its vibrant changing interactive museum exhibits,” said **Dr. Max Herman, V'59**, AMVM president. He noted that museum plans include a 70-seat movie theater/auditorium and education center, a comprehensive research library, a recreated veterinary hospital, a meeting annex with additional displays and space to store and catalogue artifacts, and a virtual museum to reach an international audience.

The museum is currently open by appointment and periodic open houses. It is easily accessible, located along Route 724, one quarter mile east of Interstate 176, Cumru Township.

For more information about the museum, please call 610-898-0659, or visit [www.amvm.org](http://www.amvm.org).





# alumni weekend



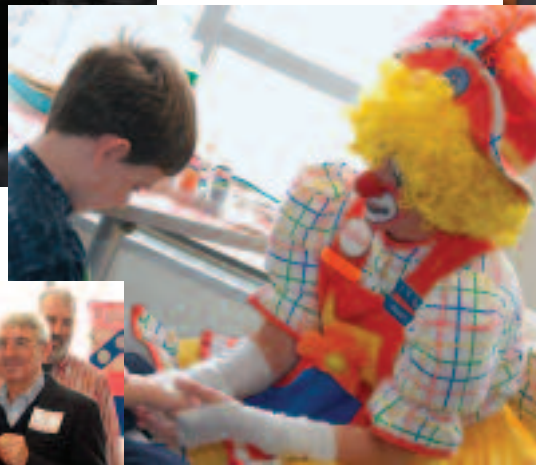
Members of Classes from the 1940s and 1950s.



Members of the Class of 1956, celebrating their 50th reunion.



Members of the Class of 1966.



## *Alumni Weekend 2006*

On October 6 and 7, 2006, Penn Vet welcomed back almost 300 alumni and friends, and enjoyed the School's first event in the soon-to-open Hill Pavilion on the Philadelphia campus. Along with lunch and tours of the Hill Pavilion were a variety of family activities scheduled throughout the day, including a caricaturist, a face-painting clown and a presentation of live animals from the Academy of Natural Sciences.



Members of the Class of 1981.



Members of the Class of 1991.



Members of the Class of 1996... and the next generation of vets?



## schoolevents

### *Leading through connections 2007 Penn Annual Conference: Issues in Critical Care*

Penn Vet hosted its 107th Penn Annual Conference on March 1 and 2, 2007, at the Sheraton City Center Hotel in Philadelphia, welcoming more than 1,200



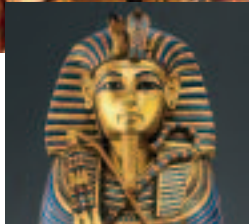
SCAVMA offered Penn Vet wares to conference attendees.

veterinarians and veterinary technicians. The theme for this year's conference was "Issues in Critical Care" and offered two days of more than 70 educational sessions. Educational tracks included emergency surgery, behavior and ophthalmology. In addition, more than 90 vendors were featured in the exhibit hall, displaying the latest in veterinary products and technology.

For the first time ever, Penn Vet partnered with the Pennsylvania Veterinary Medical Association, who hosted a pre-conference session that addressed risk management, as well as a dinner with presentations on animals in ancient Egypt, followed by exclusive entrance to the *Tutankhamun and the Golden Age of Pharaohs* Exhibit at the Franklin Institute.



More than 90 exhibitors participated in the 107th Penn Annual Conference.



### *Global Health Conference: The Perfect Storm*

A conference on global health held in November 2006 featured a host of distinguished experts discussing the far reaching environmental, infectious disease and social problems that are emerging as the population of developing countries expands, gains prosperity and increases demand for animal protein. The keynote speaker was Dr. Henning Steinfeld of the Food Agricultural Organization of the United Nations, who spoke about Livestock Sector Trends and Implications for Veterinary Public Health. The goals of the conference were to stimulate new ways for the profession to think about the world, and to acknowledge the many different stakeholders with which it must learn to collaborate to develop effective strategies to protect human and animal health as well as the environment.

Dr. Alan Kelly, Dean Emeritus, welcomes participants in the first global health conference ever held at Penn.



## Retirement Party for Dr. Richard O. Davies

On October 13, 2006, **Dr. Richard O. Davies**, professor of physiology/animal biology was the guest of honor at his retirement party at the Ryan Veterinary Hospital in Philadelphia. Dr. Davies, known mostly as “R. O.,” had been at Penn since 1960, when he began work on a Ph.D. in physiology. Although he initially was an assistant instructor

Sketch of  
R. O. Davies

and teaching fellow in Penn’s Medical School, after earning his doctorate, he transferred to the Vet School, where taught physiology in the Department of Animal Biology. In 2005, he was named emeritus professor of physiology, and served as the chair of the building committee during the planning and construction of the new Vernon and Shirley Hill Pavilion.



Above, Dr. R. O. Davies makes a speech to party attendees.

Right, as a tribute to Dr. Davies’s daily wardrobe, all attendees at his retirement party wore blue oxford shirts, khaki pants and his characteristic bow tie, even Dr. Joan Hendricks, The Gilbert S. Kahn Dean of Veterinary Medicine, and Dr. Phil Scott, professor of immunology, associate dean for research, and chair of the Department of Pathobiology.



## THE RETIREMENT GIFT ANNUITY MAY BE THE RIGHT ANSWER FOR YOU.



For more information contact

Lynn Ierardi, JD  
Office of Gift Planning  
800.223.8236 or 215.898.6171  
giftplanning@ben.dev.upenn.edu

### Retirement Gift Annuity

Here are some of the benefits:

- Supplement retirement income and support a cause you love
- Guaranteed annuity income for life
- Highly attractive annuity rates
- Part of your annuity income will be tax-free
- Capital gains tax savings on appreciated property you donate
- A tax deduction now for your gift
- The remaining principal goes to the area you support when the contract ends

Not yet retired? Consider a Penn Deferred Payment Gift Annuity. You choose the date you want to begin payments and benefit from guaranteed supplemental income.

Sample Rate Chart for a \$25,000 Gift Annuity on a Single Life

Annuitant Age at Gift	Age 65	Age 70	Age 75	Age 80	Age 85
Annuity Rate	6.0%	6.5%	7.1%	8.0%	9.5%
Charitable Deduction*	\$10,328	\$11,068	\$12,021	\$12,982	\$13,686
Annual Payment	\$1,500	\$1,625	\$1,775	\$2,000	\$2,375

\*Deduction will vary slightly with changes in the IRS Discount Rate. Assumed rate 6.2%.

PLEASE NOTE: Charitable Gift Annuities are not investments or insurance and are not regulated by the insurance department of any state.

[www.alumni.upenn.edu/giftplanning](http://www.alumni.upenn.edu/giftplanning)

© Penn Vet Giving Company



# LET THE FACTS SHOW YOU WHY RIMADYL<sup>®</sup> (carprofen) SHOULD BE YOUR FIRST CHOICE.

---

Get the facts and find out why RIMADYL is #1<sup>1</sup> at  
[www.rimadyl.com/facts](http://www.rimadyl.com/facts) or ask your Pfizer representative.



**THE FACTS IN  
BLACK & WHITE.**

---

**RIMADYL<sup>®</sup>**  
(carprofen)

 **Pfizer Animal Health**

1) Market Dynamics Inc (MDI) 2006. RIMADYL is a registered trademark of Pfizer Inc. ©2006 Pfizer Inc. All rights reserved. RIM1006118

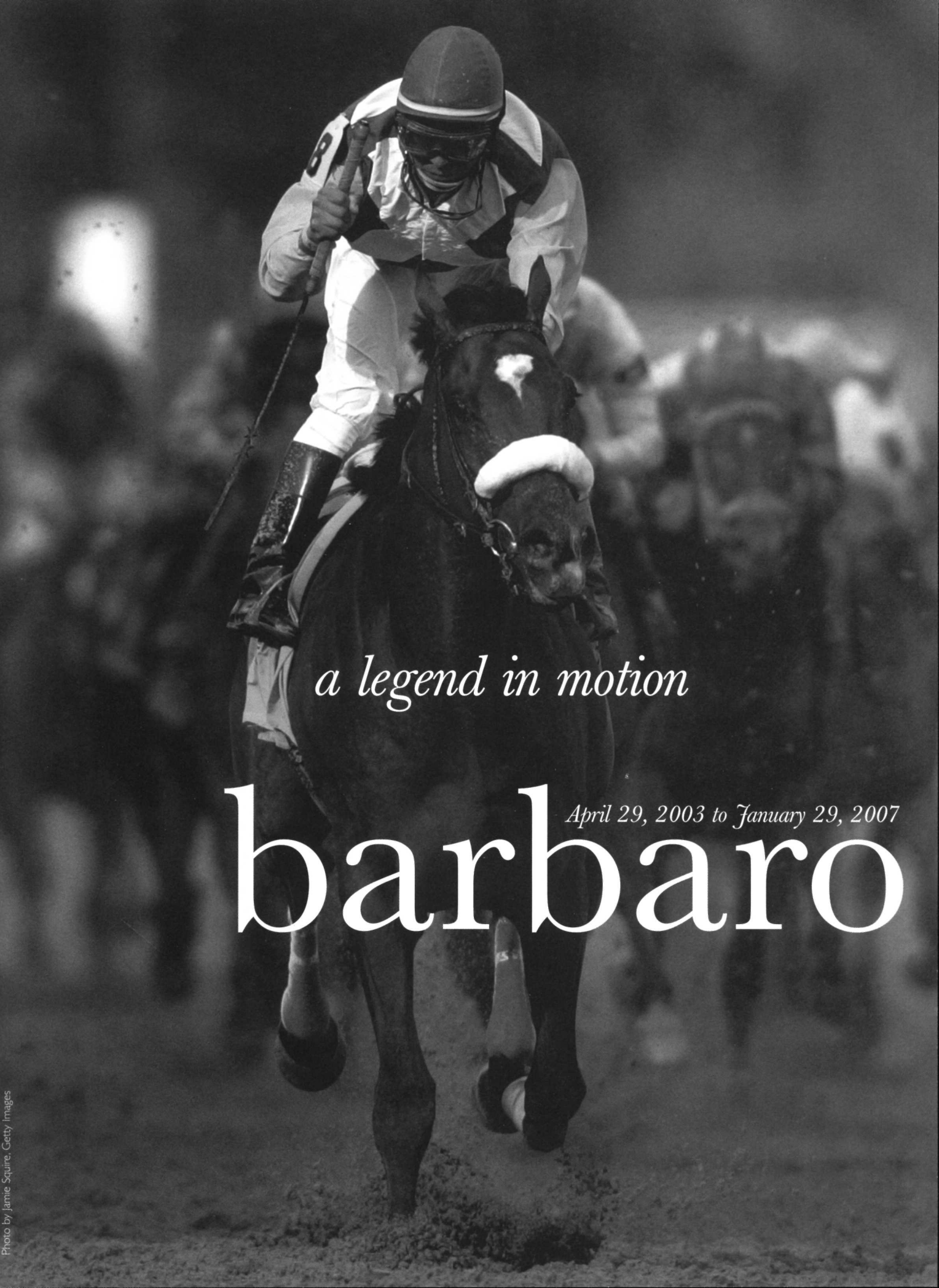


Penn Veterinary Medicine  
3800 Spruce Street  
Philadelphia, PA 19104-6008

Address Service Requested

Nonprofit Organization  
U.S. Postage  
PAID  
Philadelphia, PA  
Permit No. 2563





*a legend in motion*

*April 29, 2003 to January 29, 2007*

barbaro

# barbaro

A CHAMPION LIVES ON

BY GAIL LUCIANI

**O**n May 6, 2006, a three-year-old colt named Barbaro thundered into the limelight with a decisive win at the Kentucky Derby. Undefeated going into this high-profile race, his margin of victory—six and a half lengths—was the greatest seen at the Derby in more than 50 years.

Those following his incredible saga remember all too well what came next. His promising career was shattered with a misstep at the running of the Preakness Stakes at Pimlico two weeks later. In a stunning turn of events, Barbaro fractured his right hind leg in three places. After immediate life-saving veterinary care at the track, he was rushed by equine ambulance, with a Maryland State Police escort, to Penn's New Bolton Center.

Dr. Dean W. Richardson, an orthopedic surgeon and Chief of Surgery at the Center's George D. Widener Hospital for Large Animals, performed surgery on the colt

the next day, Sunday, May 21. He led an expert surgical team that included anesthesiologists, surgical residents and veterinary technicians in a five-hour procedure that fused the fetlock and pastern joints to repair and stabilize the injured leg. The team implanted a stainless steel plate and 27 screws into the injured right hind leg to span the comminuted fracture and joints. A fiberglass cast was placed over the leg for further support, and Barbaro was taken to the Hospital's recovery pool for the first of many surgery recoveries. Barbaro, ever the athlete, "practically jogged" to his stall, recalled Dr. Richardson.

"Barbaro's case was about as difficult as such an operation could be," said Dr. Richardson at a press conference conducted that evening. "We are optimistic, but right now we are focusing on Barbaro's recovery."

This focus would continue for several months, as Barbaro's condition improved, remained stable, worsened and stabilized again. Dr. Richardson offered regular updates to the media and the public, as the ranks of Barbaro fans and well-wishers increased daily. To many, Barbaro's heroic fight defined what was good and noble about horses and their historical connection to humans. Cards and letters arrived from fans around the world, followed by countless crates of apples and carrots. The colt especially liked the baby carrots with green leafy tops. Bags of mints and horse treats joined boxes of suggested cures; so many people wanted to share information that could possibly help the horse. Some offered their dogs to serve as companions for Barbaro, and they sent photos of their own horses that had survived horrific injuries. So many flowers were delivered that, once empty, vases were returned to the florist only to reappear with new arrangements. TastyKakes and pizza, donuts and chocolates—the tables at the Hospital's admissions desk groaned under the weight of the outpouring of support.

In July, Barbaro developed laminitis in his left hind hoof. A painful and little-understood condition, laminitis afflicts thousands of horses each year. It can result from many causes, including excessive weight bearing in one limb, and occurs when laminae, the strong connecting tissues that attach the pedal bone and the inner hoof wall, are inflamed. For Barbaro, aggressive treatment included hours each day in an equine sling, specially designed to relieve pressure on his hooves. Posted media updates became grim, as Dr. Richardson again emphasized the seriousness of Barbaro's condition.



Photo by Steven Berkowitz/V83



# dean'smessage



Barbaro remained in the Hospital's Intensive Care Unit, and under the watchful eyes of his medical team, he slowly grew stronger. "He's a smart horse and a good patient," said Dr. Richardson, emphasizing the colt's positive attitude and excellent appetite.

Daily visits by owners Gretchen and Roy Jackson contributed to that appetite—they brought clippings of fresh grass from their nearby farm. Barbaro relished this treat, and by August, he was strong enough to be hand-grazed outside.

Other visitors came—Pennsylvania governor Ed Rendell, stopping by to feed the champion a carrot, delivered promised state funding for the School. Penn president Amy Gutmann came, unofficially, on more than one occasion. Reporters paced the halls of the Hospital, a few lucky ones spending time with Barbaro, his star power undiminished. Interpretive dancer Martita Goshen paid tribute to both the equine athlete and his caregivers, with a performance in the Hospital lobby called "I Could Not Ask for More."

In early January, talk was heard of discharging Barbaro, and sending him to a horse farm in Kentucky, where the warm climate and open fields would mean more room and greater freedom. But complications in his laminitic left hind foot halted those plans; an abscess in the healed right hind foot was followed quickly by laminitis in his two front feet. From the earliest days, Barbaro's owners had not wanted him to suffer—the decision to end the fight was made in consultation with Dr. Richardson. With his owners at his side, Barbaro was euthanized on Monday, January 29, 2007.

While the loss of any patient is painful, Barbaro's loss cast a pall over New Bolton Center. "Certainly, grief is the price we pay for love," said Gretchen Jackson at the press conference announcing his death later that day.

Barbaro leaves us a champion's legacy. In life, he demonstrated power and elegance by doing so well what horses love most: running with all his strength. Treatment following his injury allowed the world to see just how far equine medicine has advanced. And his death rekindled an interest in fighting laminitis, the condition that ultimately took him—and thousands of other horses. The Jacksons recently endowed a chair for equine disease research at the School. "We are very pleased to make this commitment in support of the School of Veterinary Medicine's research of equine diseases," Gretchen Jackson said. "Our close relationship with Dr. Richardson over the last eight months persuaded us to name the chair in his honor. We are indeed grateful to him, and we especially look forward to a future without laminitis." 🍎

## Honoring Barbaro's Memory

**T**he heartbreaking end to Barbaro's saga was all too familiar to those who love horses, but the true meaning behind the story is, as Roy Jackson has said, full of hope and inspiration.

At Penn Vet, we will continue the fight against laminitis. What better way to memorialize this charismatic champion than with a focused effort to beat the condition that took him from us. No tribute could be more fitting to his indomitable spirit, or to the millions of people whose imagination he captured, than to achieve this goal. We must use this opportunity—we may not get another—to raise funds to move forward on equine diseases such as this.

On behalf of those closest to Barbaro, I would like to thank everyone, from the professionals in the media to his fans around the world, for their support and kindness throughout his stay at New Bolton Center. Now, by working together to fight laminitis, we can honor Barbaro's memory as a champion, both on the track and off.

—JOAN HENDRICKS, V'79, GR'80  
THE GILBERT S. KAHN DEAN OF  
VETERINARY MEDICINE





Photo by Bill Frakes, Sports Illustrated



Photo by Andy Lyons, Getty Images



Barbaro will long be remembered around the world as the horse with an indomitable spirit, who brought hope and joy to the lives of so many. No amount of eulogizing will ever adequately celebrate his achievements, but we can make sure that his short life will continue to have great meaning, that Barbaro will leave behind a gift for other horses for many years to come.

Laminitis, the disease that ultimately claimed Barbaro's life, is a painful and serious condition that afflicts many horses; Barbaro is just one example of the terrible toll that laminitis takes. Unfortunately, there is still no cure, but we are committed to focusing our energies toward finding one. Perhaps the greatest tribute we can make to Barbaro—the most fitting way of honoring and memorializing him—will be to defeat the disease that abbreviated the life of a truly great horse.

Much work remains in this fight, a battle that needs the help of people like you who understand the need to study disorders uniquely afflicting our equine athletes and companions. We invite you to join our team of clinical specialists and scientists here at Penn Veterinary Medicine in beating not only laminitis but other serious equine diseases as well. The Barbaro Fund at New Bolton Center helps provide the George D. Widener Hospital for Large Animals with needed equipment and improvements, and the Laminitis Fund supports crucial research being done on laminitis. Friends of New Bolton provide vital support to the George D. Widener Large Animal Hospital through their generous gifts. These unrestricted funds ensure that our equine and other large-animal patients receive the finest care available and help advance the number and type of procedures we can offer our patients.

I encourage you to support the Barbaro Fund, the Research for Laminitis Fund or the Friends of New Bolton Fund by making a gift today at [www.vet.upenn.edu/giving](http://www.vet.upenn.edu/giving) or by mailing your check, made payable to the "Trustees of the University of Pennsylvania," in the enclosed envelope or to: Office of Development and Alumni Relations, University of Pennsylvania, School of Veterinary Medicine, 3800 Spruce Street, Philadelphia, PA 19104-6047.

Together we can help Barbaro continue to make headlines as a champion both on the track and off.

Thank you.

*Alan W. Roberts*





## Dean W. Richardson, DVM

Dr. Dean W. Richardson is the Charles W. Raker Professor of Equine Surgery at the University of Pennsylvania School of Veterinary Medicine and Chief of Surgery at the George D. Widener Hospital at New Bolton Center. He is an internationally recognized orthopedic surgeon whose research focuses on cartilage repair. In his illustrious career, Dr. Richardson has received the Pfizer Award for Excellence in Research (1997), the Norden Distinguished Teaching Award (2000), the Class of 2004 and the Class of 2005 Distinguished Teaching awards, the Ohio State Distinguished Alumni Award (2005) and the University of Pennsylvania Veterinary Alumni Distinguished Teaching Award (2006). In fall 2006, he received the National Turf Writers' Joe Palmer Award.





## Gretchen and Roy Jackson

BY KATHRYN LEVY FELDMAN

It has been said that you can tell a lot about people by the way they treat their animals. While Gretchen and Roy Jackson's unwavering commitment to do whatever it took to save the life of their Kentucky Derby Champion, Barbaro, was certainly the most public demonstration of the extraordinary stewardship the Chester County couple displays toward animals in their care, it was by no means the only time they have exhibited such behavior. "We were going to try everything we could to get that horse back to living a decent life," Gretchen told *Ladies Home Journal*. "That's really the only way when you love animals."

Certainly Gretchen's love of animals has been well documented: from her childhood predilection for saving mice from hungry cats to caring for the six retired racehorses, (one of whom never made it to the track) that live on the couple's Lael Farm in bucolic bliss with assorted riding horses, ponies, donkeys, cows, sheep, dogs and cats. Roy is no less devoted to all members of their menagerie as he so eloquently told the *New York Times*, "We have an obligation. We are their keepers."

Case in point is the retired Champion Show Conformation and Working Hunter, J. K. Tindle, whom Gretchen and her daughter Lucy Zungailia, bought more than two decades ago from the November Weanling Sale at Keeneland. "They went down there to buy a horse with essentially no pedigree to train as a hunter," Roy recounted. "We broke Tindle on our farm."

Tindle, in fact, became a Champion Hunter in a long and distinguished career that spanned three owners. The Jacksons sold the horse to the Firestones, who in turn sold the horse to the Haas Family. When Tindle retired from the show circuit in a ceremony at Madison Square Garden in 1996, he had won nearly every championship up and down the East Coast. In 2004, when they were selling their farm, a member of the Haas family called Gretchen with an update on Tindle. "They were going to send Tindle to a retirement facility, but instead he came back to us to live out his life," Roy said. By all accounts, Tindle, now age 25 and blind in one eye, is content doing just that.

Then there is the saga of Wanting My Way, a filly who, about twenty-five years ago, went through the floor of a horse van with one of her hind legs. "She didn't break any bones but she peeled the skin off her leg above her hock just like a banana," Gretchen recalled. One of the horse's kidneys shut down from stress. "We did our own dialysis, 24 hours a day for six weeks," Gretchen recalled. "Everyone, including Roy, Lucy and me, took a shift, sleeping on the floor and rigging up bottles." In the end, Wanting My Way foundered, and, as Gretchen recalled, "we lost her."



HALLANDALE BEACH, FL - APRIL 1: (L-R) Michael Matz, trainer of Barbaro, jockey Edgar Prado and owners Gretchen and Roy Jackson pose in the winner's circle after winning the Florida Derby April 1, 2006 at Gulfstream Park in Hallandale Beach, Florida.

No strangers to the disease that ultimately claimed the life of Barbaro, the Jacksons hope that increased public awareness of the condition will lead to increased funding for research efforts. Despite ongoing research over the last 30 years, scientists still do not have complete knowledge of this prevalent disease, especially when it comes to devising effective preventative and therapeutic management strategies. In fact, during the eight months that Barbaro spent in the ICU of the Widener Hospital, the Jacksons saw at least four other horses succumb to complications from laminitis.

Certainly Gretchen and Roy Jackson are leading the effort with their recent \$3 million gift to endow a chair in the name of Dean W. Richardson, the cornerstone of a new major Penn Vet effort to fight laminitis. "This endowed chair is a strong recognition of the power of translating fundamental scientific advances into new real-world treatments," said Dean Joan Hendricks. "With a new faculty position dedicated to the study of equine disease, we will be better positioned to fight deadly conditions like laminitis."

It is also an acknowledgment of the gratitude the Jacksons feel not only toward Dean Richardson but to everyone at New Bolton who was involved in Barbaro's care. "Our close relationship with Dr. Richardson over the last eight months persuaded us to name the chair in his honor," Gretchen commented. "We are indeed grateful to him and we look forward to a future without laminitis." "We have no second thoughts looking back or anything," Roy told the *Thoroughbred Times*. "We just tried to enjoy all the racing as best we could and just did the best we could for him afterward. . . ."



# understanding laminitis

**L**aminitis, the painful foot malady that cut short the life of 2006 Kentucky Derby-winner Barbaro, is among the oldest and most common medical problems associated with horses. No cure yet exists for the condition, but we are committed to continuing the fight to discover one. Penn Vet has long been a leader in the fight against laminitis, and this year will host the fourth International Equine Conference on Laminitis and Diseases of the Foot, generously funded by Mr. and Mrs. John K. Castle. For more information, please see [www.laminitisconference.com](http://www.laminitisconference.com).

The loss of Barbaro to laminitis raised the visibility of this painful and little understood condition. Dr. James Orsini, associate professor of surgery at New Bolton Center's George D. Widener Hospital answers some basic questions about this deadly inflammation.

## Q. What is laminitis?

**A.** Laminitis is a painful inflammation of the lamellar tissue, the strong connecting tissue that attaches or bonds the pedal bone and the inner hoof wall together. Laminitis is very serious and can be life threatening due to the chronic and unrelenting pain associated with the loss of support and tearing of the tissue in the hoof. The front hooves are most commonly affected, although the hind feet are sometimes affected.

## Q. What are the causes of laminitis?

**A.** Laminitis has many causes, including: 1) Severe colic, a disease/condition of the intestines, one of the more common causes for laminitis. Research supports a belief that "laminitis trigger factors" shower the lamellar tissue, causing an inflammatory/enzymatic condition and failure of the bond between the hoof wall and pedal bone; 2) Endocrine diseases such as Cushing's Disease and Equine Metabolic Syndrome; 3) Prolonged and excessive weight bearing by one or more limbs; 4) Retained placenta; 5) Systemic diseases such as pneumonia and diarrhea result in a showering of the body with bacteria and can lead to a toxin release termed endotoxemia and end with laminitis; 6) Repeat trauma/injury to the horse's feet when running on a hard surface with poorly protected feet; and 7) Carbohydrate overload; if a horse eats too much grain or grass, resulting digestion problems can lead to restricted circulation that ultimately results in laminitis. The bottom line is the equine digit is capable of sustaining tremendous loading and weight bearing even at speeds of up to 40 miles per hour, but under certain conditions weakening of the bond between the hoof wall and pedal bone can cause rapid failure of this magnificent structure.

## Q. What are the signs of laminitis?

**A.** Signs of laminitis include:

1. Increased temperature of the wall, sole, and/or coronary band of the foot.
2. A pounding pulse in the digital palmar artery. (The pulse is very faint or undetectable in a cold horse, readily evident after hard exercise.)

3. Walking very tenderly, as if walking on egg shells.

4. The horse standing in a "founder stance" (the horse will attempt to decrease the load on the affected feet. If it has laminitis in the front hooves, it will bring its hind legs underneath its body and put its forelegs out in front).

## Q. What is the standard treatment for laminitis?

**A.** The treatments can be quite varied depending on the underlying cause. Generally clinicians treat the primary disease that led to laminitis, which in many cases will minimize progression of the disease. For example, if the primary cause is diarrhea the diarrhea is treated and if it is due to excessive weight bearing on one limb, the goal is to improve the weight distribution as soon as possible in the other leg. With laminitis, treat the pain, support the foot and reduce the inflammation using anti-inflammatory drugs. In many cases, cold therapy (also called cryotherapy) or ice therapy has been effective. The study for new and better treatments is ongoing.

## Q. How can a shoe help in the prevention or treatment of laminitis?

**A.** The shoe distributes the weight of the limb over a larger surface area and moves the breakover point further back on the foot, thus reducing the stress on the lamellar tissue along the front of the foot while consistently supporting the sole of the foot. With the advent of glue-on shoes, we have a uniform adherence of the shoe to the hoof wall, and therefore can reduce stress concentration on any one part of the hoof wall.

## Q. What is the difference between acute and chronic laminitis?

**A.** In acute laminitis, there is no radiographic evidence of separation of the hoof wall and pedal bone. In chronic laminitis, radiographs or x-rays reveal a change in the position of the pedal bone and hoof wall which equals separation or loss of the bond between the hoof wall and pedal bone.

## Q. What is the success rate for laminitis treatments?

**A.** The success rate varies widely and depends on many factors, such as the rapidity of onset and degree of separation of the hoof wall and pedal bone, weight of the horse (many ponies can have repeat episodes of laminitis and live a good quality of life just because they are lighter weight), control and treatment of the underlying cause for the laminitis in the first place and overall general health of the individual horse. The good news is that our success rate in treating laminitis continues to improve every year because veterinarians, farriers, horse owners, trainers and other health care providers better understand the disease and how to treat it.

For more information on laminitis, please see <http://www.vet.upenn.edu/laminitis/>. If you would like to help Penn Vet fight laminitis, please consider giving online at [http://www.vet.upenn.edu/giving/laminitis-fund\\_shoe.htm](http://www.vet.upenn.edu/giving/laminitis-fund_shoe.htm) or by calling 610-925-6180. ■

# barbaro

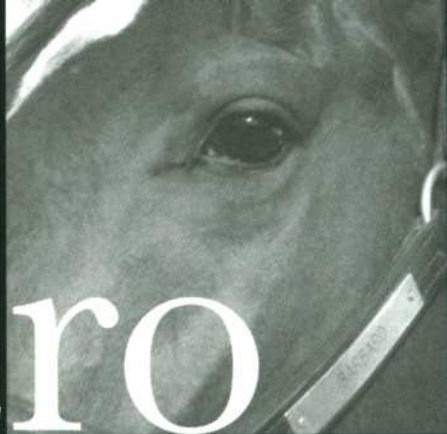


Photo by Sabrina Pierce

## THE HORSE

Where in the wide world can man find  
Nobility without pride,  
Friendship without envy  
Or Beauty without vanity?  
Here, where grace is laced with muscle,  
And Strength by gentleness confined.

He serves without servility,  
He has fought without enmity.  
There is nothing so powerful,  
Nothing less violent; there is nothing  
So quick, nothing more patient.

All of our past has been borne on his back.  
All our history is his industry,  
We are his heirs, he our inheritance.  
Ladies and Gentlemen –  
The Horse.

*By Ronald Duncan (UK)*



**Penn**  
Veterinary Medicine

*Many Species. One Medicine.™*