

Equine Science Center UPDATE

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Addressing Controversial Issues Impacting the Horse Industry

The Equine Science Center's mission is "Better Horse Care through Research and Education" to ensure the well-being of horses and the equine industry. In carrying out its mission, the Center finds itself as a leader when it comes to providing science-based information upon which policy decisions are made. These decisions can be as simple as the production of guidelines for the care of equine athletes at the State Championship 4-H Horse Show to environmental policy mandates that impact owners of horse farms in the Garden State. In its role as "Everything Equine," the Center is called upon repeatedly to provide expert advice on topics of interest to horse owners and equine enthusiasts world-wide.

There are times when emotionally charged and controversial issues are brought to the attention of the Equine Science Center for assistance and guidance. As a visionary for the horse industry, the Center continually identifies issues of importance before they actually become controversial. At its annual stakeholder meeting, the Center provides a venue for representatives of the equestrian community to 'voice' concerns and help identify specific challenges and potential threats to the

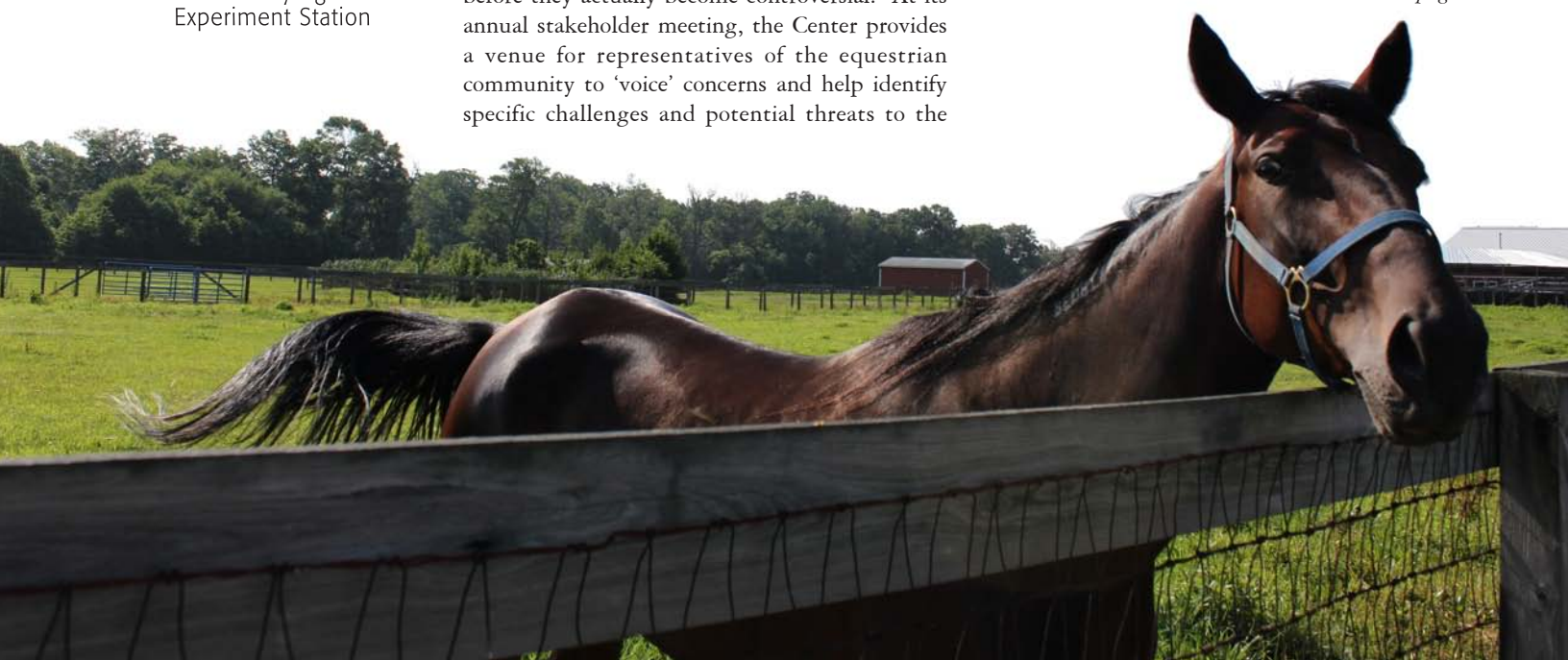
industry. Within its purview, the Center has tackled many of these issues and has conducted actual research to help the equine industry address issues of importance to ensure its sustainability. Outlined below are several examples of how the Center's work and influence have addressed emotionally charged issues.

The award winning economic impact study, **"New Jersey Horse Industry 2007: Economic Impact"** provided the facts and figures that the racing community used to educate legislators about the value of horses and horse racing to New Jersey. Beyond a simple enumeration of equids, the economic impact study detailed the number of jobs created within the industry, total acreage supporting equine facilities, an estimate of tax revenue generated, an accurate account of animals and operations, and that the equine industry contributes a total of \$1.1 billion annually to the Garden State.

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RUTGERS

New Jersey Agricultural
Experiment Station



From The Clubhouse



There has been so much activity here at the Center over the past few weeks that I've all but forgotten that we've just ushered in the season known for rest and relaxation! In the spring, I had a lovely time meeting with some of you during **Ag Field Day at Rutgers Day**, especially with the debut of our newest addition to the research herd, an articulated horse skeleton dubbed "**RU Wish Bone**" as the winning result of a naming contest initiated on the same day (story on

page 6). It was great to see all your smiling faces, and more importantly, your support for the Center and its mission of "Better Horse Care through Research and Education."

We've been quite popular in the press lately and also had a few notable visits here at the Center, the most recent being an on-camera interview with My9 News in a feature about triple-crown prospect I'll Have Another and his unfortunate injury just prior to the third leg of the race series. In late May, I was interviewed by Dr. Brian Voynik, one of my former students, for The Pet Stop segment on News 12 NJ. We also received a special visit from New Jersey Secretary of Agriculture Douglas Fisher, Assemblyman Robert Clifton (R-12), and North Brunswick Councilwoman Cathy Nicola in a celebration to kickoff June as the "**Month of the Horse**". The special guests were treated to a demonstration of the high-speed equine exercise physiology treadmill involving Snowdrift, a "**Horse Hero**" mare in our research herd. In addition to a tour of the research facilities at the Red Barn, guests were given an extensive guided tour of the **Ryders Lane Environmental Best Management Practices Demonstration Horse Farm**. Collaborating with the New Jersey Department of Agriculture for the Month of the Horse was yet another example of the

wonderful partnership we share which further highlights the significance of horses in the state of New Jersey.

It should be noted that I've been busy emphasizing the importance of horses on a national and international level as well, having recently returned from a trip to Ireland where I commenced the first year of a four year appointment as an external examiner for the University of Limerick. At the end of June, I travelled to Bozeman, Montana for the National Association of Equine Affiliated Academics conference. I was asked to participate on a panel discussion regarding approaches to using current research and fact-based literature to address emotionally charged and/or controversial topics incorporated into or impacting undergraduate curricula. Later this month, I have the honor of traveling to Arizona to receive an award from the American Society of Animal Science for the 2012 Equine Science Award which recognizes outstanding achievement in the areas of extension, research, and teaching in the equine industry. This honor of course, could not have come without your support of me and the efforts of the Equine Science Center.

Even though June was officially proclaimed as the "Month of the Horse", I believe these animals should be recognized for all they do every day of the year. The Center will be an active participant in a number of equine events being held throughout the state, including the Hambletonian weekend at the Meadowlands, as we do every year. I would also like to invite you to attend the Open Space Pace that will be taking place at Freehold Raceway on Saturday, September 29. Be sure to stop by the Equine Science Center's booth to say hello!

Keep cool over the summer and don't forget to stay connected with us on our website at esc.rutgers.edu or on **Facebook**.

Bestest,
karyn

Partners



New Jersey Farm Bureau's primary purpose is to represent the overall interests and improve the financial well-being of farmers and our \$800 million industry. NJFB

activities are supported through voluntary membership and annual dues. Members have access to:

- Staff assistance on farming issues and regulatory problems.
- Educational workshops on topical issues such as farm labor, wildlife damage, and zoning.
- Weekly updates on legislation news and regulations affecting all aspects of farming.

It pays to be a NJ farm Bureau member! For a full list of membership levels and benefits, or to sign up, visit www.njfb.org.

Established in 1961, the Standardbred Breeders & Owners Association of New Jersey [SBOANJ] has a membership comprised of horse breeders, drivers, trainers, owners, and backstretch personnel, and its mission is to support and promote the standardbred industry in New Jersey. The Board of Directors authorizes stallion, mare and foal registrations, negotiates with track management, actively oversees and administers a benefits program, and advances legislation favorable to the horse racing industry. For more information, please visit www.sboanj.com.



NJHorse Info.org: New Organization to benefit equine community

3

The New Jersey Horse Information (NJHI) organization is partnering with the Rutgers Equine Science Center, NJ Agricultural Experiment Station Cooperative Extension, NJ Horse Council, New Jersey Department of Agriculture's Equine Advisory Board, County Animal Response Teams (CARTS), 4-H Youth Development program, Pony Clubs, and the veterinary community to coalesce the vast resources available through these existing entities into a more accessible and user friendly network both statewide and on a regional basis. The goal is to amass as comprehensive a list of professional and commercial resources as possible for each region of the state, in addition to a list of credible, experienced mentors who can offer one to one assistance to horse owners in a wide variety of areas.

This strictly volunteer organization seeks to provide science and experience-based information on horse care and resources to the New Jersey equine community, recreational owner, and horse enthusiasts who might not be aware of the tremendous resources available in this region. **NJHorse Info.org** seeks to organize and channel already available information to the public by means of regional networking, mentoring and an online forum. These three channels will provide a compilation of information on equine health, management, and welfare issues from respected and credible sources in addition to serving as a "Snopes" for horses, alerting people through the forum to reliable information on emerging issues and "hot topics".

"I consistently receive daily requests for information from horse owners throughout the state and it became abundantly clear that people are

unaware of the equine-related resources in New Jersey and that there is a lot of mis-information being disseminated through the popular media and **on-line forums**," said Sarah Ralston, Associate Director – Teaching with the Equine Science Center. "Ultimately, we will become an organization of well-informed horse owners who help other horse owners in need in addition to providing a forum that is open to the public to address current issues and concerns in a user friendly but accurate fashion."

To develop regional support systems, NJHI is establishing, and continues to seek, volunteers who are willing to be trained as ambassadors and mentors to disseminate resource material and provide referrals to owners and enthusiasts in their local equine community. Those interested in volunteering need to complete a brief survey: <http://njhorseinfo.org/membersurvey.html> so NJHI organizers can determine the level and type of assistance each volunteer is willing to provide or just contact Dr. Sarah Ralston at ralstonvmd@msn.com.

Once the network is established, a vital key to the organization's success will be spreading the word within the equine community. NJHI intends to distribute flyers and booklets at auctions, rescues, horse shows, feed and tack stores plus relying on assistance from a team of trained members who will be familiar with whom they can call upon in their region if made aware of a horse owner or horse in need.

NJHI will strengthen all aspects of the horse industry in New Jersey and improve equine well-being and the enjoyment of these magnificent animals throughout the Garden State.

Horse Owners Helping Horse Owners



The New Jersey Department of Agriculture (NJDA) is an agency which oversees programs that serve virtually all New Jersey citizens. One of the Department's major priorities

is to promote, protect and serve the Garden State's diverse agriculture and agribusiness industries. In addition to the programs we offer to support production agriculture, NJDA also manages programs that feed schoolchildren, distribute surplus federal foods to soup kitchens and pantries that serve our needy citizens, conserve precious soil and water resources, protect farmland from development and preserve it for future agricultural use, expand export markets for fresh and processed agricultural products, and promote our commercial fishing industry, and administer the complete program of agriculture, food and natural resource education, which includes the State FFA Association. For more information about NJDA, please visit www.nj.gov/agriculture/index.shtml

Sandy Denarski – Chairwoman of the Rutgers University Board for Equine Advancement (RUBEA) RUBEA's mission is to assist the Rutgers Equine Science Center in its decisions regarding its equine teaching, research, and outreach; and to promote and support these activities through fund-raising and advocacy efforts. "Horses have empowered me to lead a happier, healthier and more enriched life. They are my passion and my inspiration. I can think of no better way to repay these magnificent animals than to invest in their health and well-being by becoming a donor to the Equine Science Center."



4 There's Still Time!

Complete Your Animal Waste Management Plan Today

The New Jersey Department of Agriculture adopted regulations in March 2009 requiring livestock farm owners to responsibly manage manure generated on their operations—including those with horses, dairy cows, cattle, swine, goats, sheep, poultry, and other domesticated species defined as livestock. All New Jersey farmers with livestock were required to be in compliance with these regulations by March 16, 2012.

The Animal Waste Management regulations require all farms with any livestock to comply with the following **General Requirements** of the rule:

1. Agricultural animal operations shall not allow animals in confined areas to have uncontrolled access to waters of the state.
2. Manure storage areas shall be located at least 100 linear feet from waters of the state.
3. Land application of animal waste shall be performed in accordance with the principles of the NJDA Best Management Practices (BMP) Manual.
4. Dead animals and related animal waste resulting from a reportable contagious disease or an act of bio-terrorism shall not be disposed of without first contacting the State Veterinarian.
5. Any person entering a farm to conduct official business related to these rules shall follow bio-security protocol.

In addition to the General Requirements listed above, all livestock operations with eight to 299 "Animal Units" (one Animal Unit = 1,000 pounds) were required to implement an Animal Waste Management Plan by March 16, 2012. This plan must be in accordance with the New Jersey Department of Agriculture Manual – **"On Farm Strategies to Protect Water Quality"**. This is available on the New Jersey Department of Agriculture website. Exact requirements will vary with size and density of operation.

As of April 19th, 2012 approximately 30% or 527 of the eligible farms (> 7 Animal Units) had completed their plans. Eligible farms are determined by the NJ Agricultural Statistics Service.

The Department of Agriculture will investigate alleged violations of the rules and take appropriate action,

which may include fines of up to \$1,000 per day for each violation as determined.

According to New Jersey Statute (N.J.S.A. 4:1C), farmers must comply with all relevant federal and state statutes and regulations in order to maintain "Right to Farm" protection. New Jersey's Right to Farm Act protects responsible commercial farmers from public and private nuisance actions and unduly restrictive municipal regulations. Failure to comply with the Animal Waste Management Rule may result in loss of these protections.

It is not too late to complete your Animal Waste Management (AWMP) plans or begin work on any needed Best Management Practices. The Department of Agriculture is continuing to accept the required plan declaration pages. It is essential that you complete a plan to avoid any penalties related to non-compliance. If you want to get started, contact either your local **Rutgers Cooperative Extension** office or visit the **Animal Waste Management Rule** page on the **New Jersey Department of Agriculture** website.

You may also contact one of the following Rutgers Cooperative Extension Offices for assistance:

- Hunterdon County Extension Office (908) 788-1338
- Salem County Extension Office (856) 769-0090
- Sussex County Extension Office (973) 948-3040
- Burlington County Extension Office (609) 265-5050

For more information about complying with the general requirements of the Animal Waste Rule and about completing an AWMP, go to the **Rutgers Cooperative Extension** website.

Learn more by taking the virtual tour of the Ryders Lane Environmental Best Management Practices Demonstration Horse Farm at the Equine Science Center."



Controversial Issues (continued)

Additional work by Center director Karyn Malinowski and graduate student Ryan Avenatti provided more data and insight into the number of agricultural, **tax-paying acres the Garden State could lose** if equine operators found it no longer profitable to remain in the state. Malinowski provided expert testimony, op/ed pieces, numerous media interviews and lectures at public forums as the fight to save racing in New Jersey took place over a two year period. This example of how academia can help the equine industry is still cited globally, is used as a template for other states and provinces which face pressure to reduce or eliminate horse racing, and was used as an example of dealing with emotionally charged issues in the horse industry in Malinowski's recent presentation to the National Association of Equine Affiliated Academics on June 26.

While it is not the Center's role to find homes for the increasing number of unwanted horses in the United States, it is in our mission to educate the public about responsible horse ownership and care. Under the guidance of Sarah Ralston, the Center developed a **Responsible Horse Ownership** section of its website where a variety of topics are addressed based on scientific information, ranging from the economics of horse ownership and horse care and management to dealing with the difficult issue of euthanasia. The wealth of information available from the **publications** and **FAQ** sections of the Center's website can help horse owners everywhere take better care of their horses.

On Sunday, March 25, 2012, horse racing came under renewed scrutiny with a front page investigative story about flat racing and the number of catastrophic deaths of horses and riders in the New York Times. The accuracy of the article, the first in a series, was debated for weeks and is still a hot-button issue in the industry. For the Center the response was simple, to not debate the article but to recognize the need for a strong Equine Science Center in a state like New Jersey which prides itself on its diverse horse industry and its state animal. The work done at the Center is instrumental in ensuring integrity in equestrian sports of ALL kinds and in conducting the basic research needed into the physiology of the equine athlete in response to acute and chronic exercise to safeguard the animal's well-being. The Center posted a comment to this effect on **Facebook** and has posted on its homepage a dossier of **research articles** authored by scientists at the Center pertinent to the equine athlete.

Students at Rutgers University and adults interested in the equine industry have the opportunity to learn how to deal with controversial issues firsthand. The Center offers a biennial two-day course during winter session, entitled "Developing Future Leaders for the Equine Industry." Students learn about current issues affecting the horse industry in New Jersey, how to interact with legislators, building coalitions, and networking to build a strong industry alliance. Three rounds of the short course have now been completed and the alumni of the leadership class continue to network and serve as advocates for the Center, the horse industry, and agriculture.

Your Equine Science Center recognizes its role in better horse care through research and education. Help us continue to stay on track of being proactive and not reactive to issues of importance in the equine industry by lending your support. Do your part in support of horses and the horse industry. Contact us at esc.rutgers.edu to make a gift.

NELSON'S CORNER



Ask Lord Nelson!

Did you know that besides maintaining Holy Hoofprints, the coolest equine blog on the Internet, that I am also an expert on Equine Science 4 Kids? Email your "horsey" questions to your good ole' pal Lord Nelson at LordNelson@aesop.rutgers.edu and I'll be sure to respond! Here are a few questions that I have already received. Think you know the answer? Try to answer it first, then click on the link to see if you're as smart as a horse!

Is it true that horses see things 5 times bigger they are?

Thank you for sending in your excellent question. I always enjoy telling people about how I see the world!

More...

Do horses get sore from exercise?

My friends at the Equine Science Center are experts in exercise physiology. Check out what they have to say about sore muscles.

More...

Why do horse farms smell bad?

Please, please! Maybe horse farms **USED** to smell bad, but we are addressing this and other environmental concerns at the Ryders Lane farm. Find out how!

More...

What does an athletic horse need most from food?

Take a wild guess!

More...

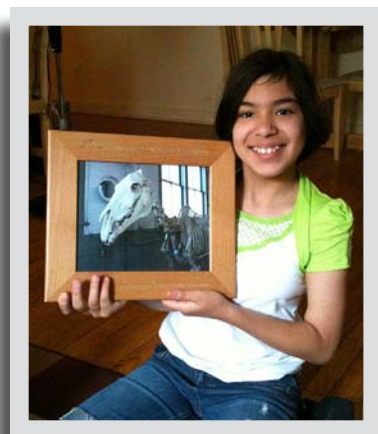
Make No Bones About It...

The Equine Science Center and the Department of Animal Science at the School of Environmental and Biological Sciences (SEBS) is happy to welcome the newest member of the equine research herd, an authentic articulated horse skeleton!

Carey Williams, Associate Director - Extension, and Sarah Ralston, Associate Director - Teaching at the Equine Science Center, were instrumental in acquiring the equine skeleton, which was purchased through a joint grant with Gloucester Community College (GCC) as a part of the "Supporting Equine Education Development" initiative, a bridge program that provides GCC students exposure to Rutgers facilities and faculty as they pursue an associate's degree in equine science. In addition to being a teaching aid in SEBS equine science courses, the skeleton will also be utilized in Cooperative Extension programs and Center Open Houses. Rutgers University is one of only two academic institutions in the northeast to own an articulated equine skeleton as a permanent addition to its educational resources.

"The full skeleton will add significantly to our students' learning experience," explained Ralston. "We have many skeletal parts, such as skulls, leg mounts, and hooves, which we already incorporate into our teaching program. Although those models alone are wonderful teaching aids, seeing how they all fit together really puts everything in perspective."

The skeleton is comprised of over two hundred individual bones that once belonged to 33 year old horse that died in the care of an equine rescue. The skeleton is missing a portion of its teeth as a result of the unfortunate circumstance that led it to the rescue facility. The specimen's unique dentistry provides a depiction for students of how neglect affects an animal at the skeletal level, which would not be found on standard equine skeleton prototypes.



"Having the model is definitely a unique advantage for students to understand the functioning anatomy of the horse, particularly the intricate parts such as the joints," Williams agreed. "It's also a great way to get students out of the classroom for hands-on learning."

The model was constructed and personally delivered by Walter Varcoe, retired equine manager for the New York State Department of Corrections who specializes in the unique art of



From top right: RU Wish Bone on display in the Round House; Carey Williams, Associate Director - Extension, posing with the equine skeleton; Marcella holding a picture of the horse she named "Wish Bone".



assembling free-standing skeletal models for institutions around the world. His models have been featured at The Museum of Natural History in New York City, as well as numerous veterinary clinics, conferences, and universities.

The fully-assembled skeleton model made its public debut on April 28th during Ag Field Day at Rutgers Day. Along with its display, many people were attracted by a naming contest held for the skeleton. The top 10 names were selected at the end of the day and posted on the Equine Science Center's Facebook page to be voted on by the pages 500 "fans". At the completion of the voting period, the name RU Wish Bone was declared the winner with a nearly 100 vote lead. The name was submitted by Marcella M., 12, of Elizabeth, NJ.

Save The Date!

The Colts Neck Trail Riders Club Poker Ride

Saturday, July 21, 2012

Bucks Mill Park

Colts Neck, NJ

www.cntrc.org

Open House

Wednesday, July 25, 2012

Equine Exercise Physiology Laboratory

G.H. Cook Campus

Rutgers, The State University of NJ

New Brunswick, NJ

cody@aesop.rutgers.edu

Open Space Pace

Saturday, September 29, 2012

Freehold Raceway

Freehold, NJ

www.openspacepace.org

Alumni Voices: Graduate Student Edition

Alumnus Uses Equine Experience to Make a Difference in Human Health

It may be hard to believe that the Director of Medical Education for a prestigious medical company earned his Ph.D. working with horses, but Dr. Charles Kearns spent six years in the Equine Science Center's equine exercise physiology laboratory (treadmill barn) before finding success in the medical research field. In this edition of Alumni Voices, Dr. Kearns shares how his experiences at Rutgers University and the Equine Science Center prepared him for his career.

Dr. Kearns already earned a Bachelor's of Science and Master's of Science in Exercise and Sports Science before arriving as a Ph.D. candidate at Rutgers in 1996. During his doctoral work, Drs. Kenneth McKeever and Karyn Malinowski served as committee chairs for his research.

"They both played a significant role in my growth and development as a scientist," said Dr. Kearns. "McKeever always challenged me

to try something new and to be bold in identifying solutions to problems and perplexing challenges," said Dr. Kearns.

Dr. Kearns' research focused on the physiological effects of the drug clenbuterol on exercising horses. Clenbuterol is a repartitioning agent (a drug that increases muscle mass while reducing fat mass) used to help horses with respiratory problems, but is restricted in racing

because of its performance-enhancing effects. After earning his Ph.D., Dr. Kearns remained at the Equine Science Center as a Post-Doctoral Associate to continue his research with exercising Standardbreds. His work established the harmful effects of clenbuterol on equine cardiac and aerobic performance.

After leaving Rutgers, Dr. Kearns completed two fellowships: at the National Institutes of Health in molecular biology and at

Schering-Plough Research Institute in cardiovascular and metabolic diseases, using rats as a model to explore genetic factors of obesity. He currently serves as the Director of Medical Education for Medscape and theheart.org, which are subsidiaries of WebMD. These organizations provide Continuing Education training for physicians to keep them up-to-date on clinical trials, guidelines, perspectives on patient care, and more. "We help doctors provide the best care to patients," says Dr. Kearns.

Dr. Kearns firmly believes that his time at Rutgers provided him with a solid foundation in science and experimental design, which allowed him to excel in his subsequent career.

"One of the things that I learned through working in the equine exercise physiology lab is that one cannot be afraid to ask questions; in fact, I believe that science is about asking the right questions," added Kearns.

He gained a thorough understanding of physiology, and since the horse is an excellent model for human physiology, he could apply what he learned at Rutgers to his future positions.

"An exciting part of working with horses is that while they are the best model for human medicine, horses are also an excellent model for the horse," said Dr. Kearns.

"Many animal studies primarily benefit humans; our research always had to make an impact on horses and/or equine industry, which in turn, benefits humans."

While the Equine Science Center clearly influenced Dr. Kearns, he left his own mark here through his introduction of new laboratory techniques, such as the use of ultrasound to measure horse body composition, which is still frequently used in the treadmill barn.

Overall, Dr. Kearns is grateful for his experience at Rutgers. He says, "I never felt limited in what I could do at the Equine Science Center and I was always pushed to think bigger and outside the box, and these are skills that have served me well." He appreciates that he was not pressured to remain in academia as a faculty researcher; in fact, he was encouraged to pursue whatever career path he desired.

"I worked with an impressive group of undergrad students," said Dr. Kearns. "The majority of my former students are now themselves doctors. Some found success as veterinarians, executives in pharmaceutical industries, and others have fulfilling careers in the equine industry."

Dr. Kearns admitted that he is not necessarily a typical "horse guy", but he enjoyed learning about horses and the equine industry in New Jersey, and still does occasional consulting in equine research. He also maintains his connection with the Equine Science Center by sponsoring graduate students; he believes that it is important for alumni to give back and help those students who are just starting out. Even if the support is not financial, alumni can still help by giving their time to mentor students. The Equine Science Center is truly proud of this exceptional graduate.



Dr. Charles Kearns conducted his doctoral work at the Equine Science Center's equine exercise physiology laboratory.

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Equine Science Center

Better Horse Care Through
Research and Education



**Forward to
a Friend**



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Help Your Horse Beat the Heat!

When the temperature is over 95 degrees horses, like humans, can suffer heat stress or worse. Similar to humans, horses sweat to cool themselves off with huge losses of water and salt from their bodies! It is worse in the high humidity typical throughout the summer months in New Jersey.

The following is a list of recommended precautions to take in order to keep your equine companion comfortable in extreme heat:

1. Make sure they have free access to water and salt!
2. If possible, provide ample shade. If your horse is in a barn or stable, make sure all windows and doors are open for ventilation. While your horse is outside, if run-in sheds or tree shade is not available, consider erecting a makeshift shade station out of a tarp or other material that can be set-up easily and moved around as the sun shifts throughout the day.
3. Exercise EXTREME caution if using a fan(s) inside the barn. Pay particularly close attention to ensure all electric cords are properly protected and grounded and that horses cannot reach any part of the fan. Fans are an extreme fire hazard! Professionally installed ceiling fans or exhaust fans at the ends of the aisles are MUCH safer and preferable to individual fans which can be tied or hung in front of stalls. If

good ventilation is not available in the barn, it may be preferable to keep horses outdoors and follow the steps in Tip #4.

4. For horses kept outdoors, make sure their water tanks are full and consider spraying them with water every few hours in the heat of the day, especially if no shade is available. There is a chance that the horse may immediately roll around on the ground a little and get dirty, but they will be much more comfortable.

5. Do not ask them to perform strenuous work. If the horse must work, sponge it with cool water on its neck and legs periodically to help with cooling.

6. If it is an older horse or one that has a longer hair coat, like a Bashkir Curly, consider body clipping it. Especially with an older horse, do NOT leave it in the hot sun without providing shade. Older horses cannot thermoregulate as well as a younger horse.

Sarah Ralston, VMD, PhD, DACVN
Associate Director – Teaching
Equine Science Center



Keep cool this summer!