

# NEWS UPDATE

## EQUINE SCIENCE CENTER

*"Better Horse Care Through Research and Education"*

FALL 2009

### Creation of an Environmental Best Management Practices Showcase at the Rutgers Equine Science Center

*Carey A. Williams, Ph.D., Equine Extension Specialist*

In 2005 a team of Rutgers researchers affiliated with the Equine Science Center and several state and federal agencies began a multi-year collaboration. They sought to develop a demonstration working horse farm at the New Jersey Agricultural Experiment Station that used agricultural best management practices to provide solutions to many environmental issues facing farm owners and stable managers today.

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Our researchers identified numerous environmental issues, such as preserving water quality, proper nutrient and waste management, farm and pasture management, weed control, fencing, pasture rotation, and soil enrichment, to name a few.



*This rain garden filters nutrients in runoff water that drains through the adjacent horse paddock.*

Located at the existing Ryders Lane facility on approximately 40 acres, the facility is not only a model best management practice (BMP) horse farm, but also a learning center where research, education and proactive outreach through live demonstrations and twilight seminars enrich the public's understanding of how to successfully manage environmental challenges their farms may face.

Funding partners for the project included the State Equine Initiative of the New Jersey Agricultural Experiment Station, Region II of the U.S. Environmental Protection Agency, the New Jersey Department of Environmental Protection, Natural Resources Conservation Service, the Northeast Sustainable Agriculture Research and Education Program of the U.S. Department of Agriculture, and the New Jersey Department of Agriculture.

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New Jersey Agricultural Experiment Station

# From the Clubhouse

Karyn Malinowski, Ph.D., Director



Photo by Nick Romanenko

## Greetings, Friends!

The Equine Science Center was bustling with activity during the summer months and we are excited about continuing our vigorous work of research and education throughout the fall and winter. For the majority of both June and July, I locked myself in my office and worked tirelessly to write a report of the impact of slot machines

and video lottery terminals on the economy, the horse racing and breeding industry, and agriculture and open space in states and provinces where they currently exist. The intent of the paper was to assist policy makers as they deliberate the future of the racing industry in the state of New Jersey. The work was a huge undertaking and I promptly enlisted the help of co-author, Ryan Avenatti, a new PhD student in the Rutgers University Graduate Program in Endocrinology and Animal Biosciences. After countless hours of research that took us from Pennsylvania, New York, and several tracks within New Jersey, Ryan and I released the report in late July. The paper is currently available from the homepage of the Equine Science Center website. We welcome your feedback and comments.

Our annual Stakeholders Meeting, similar to a town hall meeting, was held in mid-October. We eagerly anticipate this meeting because it is the perfect opportunity for us to have an open dialogue with members of the equine community. Attendees share their ideas and problems as they relate to the overall equine industry. The discussion revolved around the five focus areas of the Equine Science Center: Horse Health; Environmental Stewardship; Land Use; Integrity of Equestrian Sport; and Economic Growth and the Future of the Horse Industry. A significant number of our scientific research projects and new initiatives stem from the comments and concerns we receive during the Stakeholders Meeting.

Immediately following the meeting this year was the Farm and Land Management Workshop, organized by Dr. Carey Williams, Extension Specialist in Equine Management at Rutgers Cooperative Extension. Held at the Ryders Lane Best Management Practices Horse Farm, the workshop covered topics including manure storage and research, biofiltration swales, paddock draining systems and rain gardens, and much more. See our feature story in this issue.

As you add dates to your fall/winter calendar, be sure to include the Equine Science Center Update, the *Developing Future Leaders for the Equine Industry* short course and the Horse Management Seminar. Truly a remarkable evening of presentations and demonstrations, the Equine Science Center

Update, scheduled for Tuesday, December 8, 2009, is an opportunity for faculty researchers and their supporting team members to share current scientific research initiatives and ongoing efforts in advancing equine industry concerns and issues. On Tuesday, January 12, and Thursday, January 14, 2010, we will conduct the *Developing Future Leaders for the Equine Industry* two-day short course, designed to develop leadership skills and empower participants to initiate coalitions to ensure the viability of the horse industry. Always a well-attended event, the Horse Management Seminar is scheduled for Sunday, February 7, 2010. Please visit our website for additional details as each event draws near.

In a concerted effort to stay in tune with the latest technological advances in disseminating information, the Equine Science Center is proud to announce dates for its fall 2009 Webinar Series. This is an online learning opportunity that will cover diverse issues. See page 5 for a listing of topics and times. We also now have a group page on the social networking website, Facebook. Our page, entitled "Friends of the Equine Science Center," is free to join and is a new and exciting way for us to foster a sense of pride and community among alumni, faculty, staff, students and equine enthusiasts. More information can be found on page 6.

It is with great pride that I recognize Drs. Sarah Ralston and Carey Williams for their collaborative spirit in partnering with Gloucester County College in late August to present "The Science of Horses," a workshop geared toward science educators and equine enthusiasts, funded by the USDA and the CSREES Agricultural Education Challenge Grants Program. I am also pleased to recognize Nettie Liburt, a Ph.D. candidate in the Graduate Program in Endocrinology and Animal Biosciences, as the recipient of an inaugural Equine Science Center scholarship. The award, given by an anonymous donor, will be presented annually to a deserving student in the equine science program.

The research and education conducted at the Equine Science Center would not be possible without the generous support of the equine industry community. Recent Center supporter and friend Antonette Nigito commented, "Caring for horses has been a life-long passion for me and I firmly believe that the Equine Science Center vision not only matches my passion, but possesses the resources to ensure that the equine industry remains a vital factor toward the quality of life in New Jersey." She went on to say, "It is imperative that we forge ahead and fight to save the equine industry in New Jersey. The science and research of the horse is exhilarating and I am overjoyed by the magnificent work conducted at the Equine Science Center." To learn more about supporting the Equine Science Center, please visit our website, [www.esc.rutgers.edu](http://www.esc.rutgers.edu) or call us at (732) 932-9419.

# A New Era for the Young Horse Teaching and Research Program

*Dr. Sarah Ralston, VMD, Ph.D., dACVN*

For the past ten years, the Young Horse Teaching and Research program has focused upon the unique nutritional and behavioral needs of draft cross weanlings and yearlings from ranches collecting pregnant mare urine in North Dakota and Canada. Up to this year the Program worked with foals registered by the North American Equine Ranching Information Council (NAERIC) to better understand this increasingly popular type of horse on which there was little scientific information. These horses are now well-recognized as valuable equine animals, commanding high prices even as weanlings, and a great deal has been learned about their nutritional needs and behavior. Because NAERIC horses now have well-established markets in a variety of disciplines, they are no longer “at risk” for finding good homes and athletic careers.

However, thousands of Bureau of Land Management (BLM) mustangs are removed from public ranges annually to prevent overgrazing. These horses are in need of help and good homes. While obviously not the same as the larger, heavier draft-crosses, they too can be wonderful equine athletes, excelling in a wide variety of disciplines. Unfortunately, the general public’s perception is that mustangs are “wild,” difficult to handle and not very useful. We hope to help change that perception.

This year we are “re-inventing” the Young Horse Teaching and Research program. We will select four yearling BLM mustangs to incorporate into our research. These four horses



*Dr. Sarah Ralston introduces herself to RU Honky Tonk at his North Dakota ranch home.*

will be compared in both training and growth performance to the 4 unhandled weanlings we will receive from our known bloodlines in North Dakota and the 4 draft cross yearlings left over from the 2009 program.

We anticipate that the mustangs will not be too different to train than our unhandled NAERIC weanlings. By selecting yearlings based on the conformation and behavior criteria we have established over the years, we expect to produce very attractive, well-behaved young horses with tremendous athletic potential by the end of the school year for the Annual Young Horse Auction on April 26, 2010. Watch for their progress on our website: [www.esc.rutgers.edu](http://www.esc.rutgers.edu).

## Best Management Practices Showcase

*(continued from page 1)*

The following objectives were accomplished:

- 1) Implementation of stormwater BMPs that minimize water quality impacts, and research conducted to determine the effectiveness of these BMPs,
- 2) Implementation of pasture management strategies that protect the environment and optimize forage quality and availability to horses despite restricted acreage,
- 3) Creation of effective manure management systems to minimize the environmental impacts of equine waste, and
- 4) Development of educational demonstrations and workshops for stakeholders.

Manure projects included the construction of a manure storage pad to accomplish the experiment station’s comprehensive

nutrient management plan (CNMP) objectives with the proper storage space, drainage capabilities and buffering system. Dr. Mike Westendorf, Livestock Extension Specialist and co-PI on the project, says “The project demonstrates the importance of on-farm manure storage, which can result in reduced waste runoff and an improvement in water quality. It also demonstrates nutrient management planning that balances the nutrients in animal waste with crop nutrient requirements, uptake and plant growth. Rutgers University and the Equine Science Center have taken the lead in nutrient management planning by developing a plan for nutrient management that meets state and federal requirements. Manure storage and the nutrient management plan are both highlighted and demonstrated as part of the educational farm tour.”

*(continued on page 5)*

# Meet Bonnie and Snowdrift

## Bonnie

Hay I'm Lost, aka Bonnie, is a 12-year-old Standardbred mare by Go Get Lost out of the Chiola Hanover mare Hay Wen Li. Bonnie joined the Equine Science Center's team of research horses in 1999 when she and her dam were donated by Phil Wilson, who was reducing his broodmare band.

Bonnie has an interesting story. She "jumped right in" to her tenure at Rutgers by participating in exercise physiology research on the high speed treadmill. She is a favorite subject for our teaching and demonstration programs primarily because of her beauty and her ability to patiently stand during long lectures.

A former student of ours, Wendy Gale Hale, admired Bonnie's conformation and potential as a racehorse and suggested that we consider racing her. Bonnie was just five years old, having had only two starts for Mr. Wilson as a three-year-old. The Gales took Bonnie under their tutelage. In 2002 she had nine starts, and her lifetime win occurred on March 17 in a torrential downpour on a "sloppy" track in a time of 2:07:3. Unfortunately, we don't have a win photo because the track photographer forgot to put film in his camera! We later discovered during a thermography demonstration that Bonnie had a "hot spot" in her right hind foot so her career as a racehorse ended abruptly.

## Snowdrift

BJ's Snowdrift is a 9 year old Standardbred mare by the famous pacer Artsplace out of the No Nukes mare Empressment. "Snowy" is an Equine Science Center "spokesperson" who has been featured in many treadmill demonstrations for the media and general public, including appearances on *Good Morning America* and Channel 12's show *Pet Stop*.

In November of 2003, Snowdrift was donated to the Equine Science Center by Brian and Jennifer Nixon's BJ Farms in Jamesport, New York. The Nixons have placed many mares in our teaching and research program over the years and continue to be strong supporters of the Center and its work. Snowdrift raced for the Nixons as a three-year-old. She started 33 times with 4 wins, 4 places and 6 shows, earning over \$50,000. Her personal best time is 1:57:3 on a five-eighths mile track.

While training to get back to the races as a four-year-old, Snowdrift was diagnosed with the neurological disease Equine Protozoal Myelitis (EPM) and never raced again. She has been our "star" ever since. Dr. Carey Williams states, "Snowdrift has never shown any signs of EPM since she came to us. She has



*Bonnie takes a break from "teaching classes."*

Bonnie continues to be well-loved by our students. Although she is a little too over-conditioned, she stills holds the Equine Science Center's record for being the only trotting mare since 1995 to have never broken from a race trot into a gallop on the high speed treadmill—even when completing tests of up to 25 miles per hour. This is quite an accomplishment!



*Dr. Carey Williams (right) and students help Snowdrift get ready for a treadmill demonstration.*

always been a student favorite and my most easily-maintained mare. She can come off a 6 month exercise hiatus and act like she never stopped running!"

# Best Management Practices Showcase

*(continued from page 3)*

Pasture BMPs include a new perimeter fence and stress lot and rotational grazing fencing that utilizes two to ten acre pastures to maximum potential. The rotational system demonstrates fencing varieties, enabling horse farm owners to understand the pros and cons of each type. Fields are monitored and the rotation schedule varies depending on weather and pasture conditions. Horse stocking density is adjusted as necessary.

Various water quality improvement projects have been completed to properly drain roof runoff from the barn as well as the surface runoff through the paddock. However, a bioinfiltration swale was recently constructed to facilitate the nutrient uptake from stormwater flowing through the horse pastures. The bioswale is outlined with a 15-foot vegetative buffer that is fenced off from animals but maintained by routine mowing. Filtered water exits into the drainage ditch that runs adjacent to Ryders Lane and empties into the Lawrence Brook.

Educational programs have been developed at the Center based on these BMPs. Horse owners and other farmers have visited the facility for twilight meetings and workshops/seminars to learn how to identify areas of concern at their facilities and select BMPs that can be adopted to address them. A BMP demonstration day (The Farm and Land Management Workshop) took place on Oct. 16th to introduce newly designed educational farm tour signs and BMPs. The farm tour signs provide a self-guided educational tour of the farm's BMPs.

The director of the Equine Science Center, Dr. Karyn Malinowski, says, "The Center is extremely proud of this project, the first of its kind in the nation, which has a positive impact on horses, horse farm owners, and the environment. It is our sincere hope that horse owners from around the globe will use this facility to improve their own best management practices at home, wherever it may be."

Another educational resource includes the Ryders Lane portion of the Equine Science Center website. The website lists the various areas of focus (pasture, manure and water) and provides updates on each, including the rationale involved in designing and constructing each BMP. There have been continuing updates on the website for the completed manure storage pad, perimeter fence, new equipment, rain garden and roof runoff drainage system.

Overall we are very excited to have completed the construction of the first best management practice horse farm. We hope horse farm owners will take advantage of all that it has to offer. For more information on the facility, or to take a tour, visit our website, [www.esc.rutgers.edu](http://www.esc.rutgers.edu) or contact [cwilliams@aesop.rutgers.edu](mailto:cwilliams@aesop.rutgers.edu).

# Equine Science Center Fall 2009 Webinar Series

The Equine Science Center is proud to announce the dates and topics of its fall 2009 Webinar series. A webinar, or "web seminar," is a presentation or lecture transmitted over the Internet. It is designed to be interactive, enabling participants to give, receive, and discuss information. Anyone with a computer and a connection to the Internet can participate.

By implementing online learning opportunities, the Equine Science Center aims to promote equine science education and advance the Center's mission of better horse care through research and education.

"The webinar series and other outreach efforts are rooted in our responsibility to continually engage the equine community," says Dr. Karyn Malinowski, Center director. "At the Equine Science Center, conducting scientific research and identifying issues in the horse industry accomplish only half our goal. The other half is to educate. Our objective is to effectively communicate our work to the equine industry throughout the state of New Jersey as well as nationally and internationally."

The webinar series schedule is as follows:

**Monday, Oct. 26th at 7:00 pm**

"Importance of Pasture for Horses" presented by Dr. Carey Williams

**Monday, Nov. 2nd at 7:00 pm**

"Future of the NJ Horse Industry – The Impact the Demise of Racing Has on YOU!" presented by Dr. Karyn Malinowski

**Monday, Nov. 9th at 7:00 pm**

"Basic Equine Behavior" presented by Dr. Sarah Ralston

**Monday, Nov. 16th at 7:00 pm**

"Comparative Exercise Physiology: How We Are Like Our Horses" presented by Dr. Ken McKeever

The webinar series is open to the public and there is no fee to participate. For the most up-to-date information about the webinars, including the web address to join, please visit the Equine Science Center website at [www.esc.rutgers.edu](http://www.esc.rutgers.edu).

# New Club Formed to Support the Equine Science Center

By Susan Koval

In May, a small group of Rutgers University alumni associated with the Equine Science Center met for a brainstorming session. Called together by Sandra Denarski, Chair of the Rutgers University Board for Equine Advancement (RUBEA), and Dr. Cathy Ann Ball, (Cook College Class of 1979), the group worked to identify ways that Center affiliates and Rutgers animal science alumni could partner to support the Center's future. Out of this meeting, the "Friends of the Rutgers Equine Science Center Club" was born.

One of the Club's goals is to have a large and eclectic membership which will bring many skills, talents, and resources to the table to help fulfill its mission of ensuring the Equine Science Center's future. Members are actively looking for others to join the organization.

To assist in reaching out to other Rutgers alumni and members of New Jersey's equine community, Club member Nettie Liburt (Rutgers University Class of 2005) created a Friends of the Equine Science Center Club Facebook group to keep folks up-to-date on Center news, events, and networking opportunities. Over time, discussion boards and photo albums will be added to the group, which can be visited via [www.esc.rutgers.edu](http://www.esc.rutgers.edu).

The Club recognizes the Center's value in translating and delivering equine research results from the ivory towers of academia to the "real world." Helping the public use and experience Center resources and knowledge in practical applications is one of the Club's key initiatives, as well as advocacy and fundraising. To that end, Club members are ready with Center brochures and information to help spread the word at any events or shows they attend.

Proposed advocacy projects include a fundraising dinner with a noted speaker hosted at a beautiful equine facility; and increasing contributions to the Center's "Honor Roll," in which donations are made in honor of a deceased loved one (equine or otherwise), with the deceased's name appearing on the Center's website at [http://www.esc.rutgers.edu/giving\\_honor\\_roll.htm](http://www.esc.rutgers.edu/giving_honor_roll.htm). Other ideas include helping the Center become a recipient of racetrack or other horse event charities, or enlisting the aid of New Jersey celebrities who have a connection to the horse industry.

The Club is also reviewing suggestions to increase advocacy for the Equine Science Center. Adding signage at racetracks

and high profile equine events and running a "bus tour" to visit large horse shows and educate children and adults about New Jersey's horse industry and the Equine Science Center are just two ideas on the table. To submit a suggestion or get involved as a Club member, call 732-932-9419 or email [esc@njaes.rutgers.edu](mailto:esc@njaes.rutgers.edu).

## Upcoming Events

### **Equine Science Update**

Tuesday, December 8, 2009  
Cook Campus Center  
Rutgers, The State University of New Jersey  
New Brunswick, NJ  
*Call 732-932-9419 for reservations*

### **Developing Future Leaders for the Equine Industry Short Course**

January 12 and January 14, 2010  
New Jersey Museum of Agriculture  
New Brunswick, NJ  
*Call 732-932-9419 to register*

### **Horse Management Seminar**

Sunday, February 7, 2010  
Cook Campus Center  
Rutgers, The State University of New Jersey  
New Brunswick, NJ  
*Call 732-932-5529 to register*

### **Ag Field Day at Rutgers Day**

Saturday, April 24, 2010  
G. H. Cook Campus  
Rutgers, The State University of New Jersey  
New Brunswick, NJ

### **Young Horse Teaching and Research Program Yearling Auction**

Sunday, April 25, 2010  
G. H. Cook Campus  
Rutgers, The State University of New Jersey  
New Brunswick, NJ  
*Call 732-932-9404 for information*

# Alumni Voices: The Shaping of a Future Veterinarian

*By John Lucy, Class of 2008*

I vividly remember my freshman move-in at Cook College back in 2004. Behind the chaotic stampede of anxious freshmen dragging overpacked boxes (with way more belongings than would ever fit in their dorm rooms) was an aroma that, at the time, seemed foreign to me. You see, my dorm was directly adjacent to the college farm, and the odor of horses, cows and pigs wafted over in the warm summer breeze. As a suburbanite who had spent the bulk of my childhood in developed Ocean County, the idea of living next to a farm seemed as bizarre as the fact that I would have to share a bathroom with about thirty strangers.

But that aroma soon brought with it a sense of being home. Within weeks of starting classes I had already taken multiple trips down to the farm for my introductory animal sciences course, and by October I had gotten the extraordinary opportunity to see one of our wonderful Standardbred mares racing to near-maximal speed on the Equine Science Center's treadmill. It was at that moment that I knew that I had to make working with these incredible animals a pillar of my academic pursuits at Rutgers.

The following spring I began conducting research with Dr. Carey Williams, the school's equine extension specialist - a task that I would continue until its culmination in a G.H. Cook Thesis during my senior year. During my time in Dr. Williams' lab I learned everything from basic equine husbandry to proper jugular catheterization, and I had numerous opportunities to meet many "bigwigs" in the New Jersey equine community. My thesis study, which focused on antioxidant supplementation and its impact on exercise-induced inflammation, was one of the greatest highlights of my undergraduate years. (The second, perhaps, was an exceptionally successful football season!)

My didactic coursework in animal science was also a huge benefit, as my classes in nutrition, reproduction, endocrinology and physiology all prepared me for the science-intensive veterinary curriculum at Cornell University. Also, my leadership roles at Rutgers, which included being president of the Veterinary Science Club and a Student Orientation Ambassador, have made me a more active member of my vet class than I ever would have been otherwise.

My love for horses, which developed and coalesced during my undergrad years, has lost no steam during vet school. Since graduating, I have explored various aspects of equine medicine and have loved them all! I spent the past two summers working on research projects; the first at Virginia Tech looking at obesity in Thoroughbreds and this past summer at Cornell working with horse stem cells under the mentorship of Dr. Alan Nixon, a renowned equine orthopaedic surgeon. I've also had the opportunity to get my hands dirty as both a large animal surgery technician and a foal "sitter."

Since graduating, I have realized how fortunate I was to have studied at Rutgers. The experiences I had and the people I met there have positively shaped my life, nurturing both my academic and personal needs and making me into a much better person (and, in three years, veterinarian) than I would have ever been otherwise. And for that, I will be eternally grateful.



*John Lucy treats a "patient" with tender loving care.*

# Equine Science Center Platinum Partners



Because it isn't headline news anymore and because it's been around for several years, many horse owners believe West Nile virus is no longer a threat to their horses," says

Tom Lenz, DVM, Vice President of Professional Services at **Fort Dodge Animal Health**. "This is not true. It is still a serious equine health issue and all horses should be vaccinated." Horse owners should contact their veterinarian as soon as possible to evaluate threat levels in their area and determine their horse's current vaccination status, to ensure they will have maximum protection against the disease. West Nile-Innovator from Fort Dodge Animal Health is the No. 1 choice among veterinarians with more than 28 million doses of the vaccine administered nationwide. Learn more at [www.fortdodgelivestock.com](http://www.fortdodgelivestock.com).

**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](http://www.njfb.org).



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entire herd, Purina makes a formula just right for you. Discover more at [purinamills.com](http://purinamills.com).

With two stores in Englishtown, NJ, one in West Chester, PA, and New Jersey's first Equestrian Superstore in Cream Ridge, **Rick's Saddle Shop** provides a wide selection of products - including a choice of over 3,000 saddles. The Cream Ridge store features a 1,200-square foot



learning center dedicated to educating the public about and promoting interest in horses. This area is available for seminars, club meetings, lectures, product trunk shows and horse-themed parties, as well as other events. There also is a fenced-in area for saddle fittings and demonstrations, a feed warehouse and a 12,000-square foot showroom featuring English and Western tack and apparel as well as veterinary supplies, barn supplies, gift items, treats, work clothes and other items for equestrians of all ages and disciplines. Visit Rick's Saddle Shop on the web at [saddlesource.com](http://saddlesource.com).



**Rutgers New Jersey Agricultural Experiment Station (NJAES) Cooperative Extension** helps the diverse population of New Jersey adapt to a rapidly changing

society and improve their lives and communities through an educational process that uses science-based knowledge. Through science-based educational programs, Rutgers Cooperative Extension truly enhances the quality of life for residents of New Jersey and brings the wealth of knowledge of the state university to local communities. Visit them on the web at <http://njaes.rutgers.edu/extension>.



"Better Horse Care Through Research and Education"

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