# NEWSOUPDATE

## **EQUINE SCIENCE CENTER**

"Better Horse Care Through Research and Education"

FALL 2007

# Equine Science Center Offers New Courses Open to the Public

In response to the needs of horse owners, the Equine Science Center will offer two new courses in 2008 focusing on horse health and horse industry leadership.

The first is a semester-long program called "Advanced Equine Health Care and Management" that will meet on Monday and Wednesday evenings, starting January 23, 2008, on the Cook campus at Rutgers in New Brunswick. The second is a two-day "short course" on "Developing Future Leaders for the Equine Industry" that will take place on January 9 and 10, 2008, also on the Cook campus.

Both courses are open to adult learners and continuing education students, along with students enrolled in Rutgers. "Advanced Equine Health Care and Management" is a joint effort of Rutgers' School of Environmental and Biological Sciences (SEBS) and Centenary College, and is open to Centenary students as well.

According to Karyn Malinowski, Ph.D., director of the Equine Science Center, the two new "public" courses are just part of the expansion of equine-related learning that is under way at Rutgers.

"Upwards of 60 undergraduate and graduate students enrolled in Rutgers are involved in equine studies each semester," says Dr. Malinowski, "with emphasis on the science of horses—not only 'how,' as in many other equine curricula, but 'why.' Opening up some of these courses to students from other institutions as well as adult learners helps us fulfill our goal of 'better horse care through research and education.'"

"Advanced Equine Health Care and Management" will be taught by Michael M. Fugaro, VMD, DACVN, a veterinarian

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Dr. Malinowski will be teaching "Developing Future Leaders for the Equine Industry" in 2008.

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### From the Clubhouse

#### Dr. Karyn Malinowski, Director



With fall well underway, it is amazing to think how quickly this past summer flew by. Perhaps that's because it was one of the busiest for the Equine Science Center. Here are some highlights:

Equine Science Center faculty and staff have spent a majority of the summer talking about the results of the recent economic impact study conducted by the Center.

Under the banner, "New Jersey Equine Industry – 2007: Its Impact on the State's Economy, Open Space Preservation and Traditional Agriculture," our presentations reached more than 200 individuals involved in the horse industry. So far, we have appeared at a "town hall" meeting at Rick's Saddle Shop, organized by farm owner Mark Mullen; a "legislative day" sponsored by the New Jersey Farm Bureau; a general meeting of the New Jersey Horse Council; a stop at Perretti Farms during a legislative tour sponsored by the New Jersey Agricultural Society; a seminar at the veterinarian continuing education conference during Hambletonian Week; and a meeting of the Thoroughbred Breeders Association of New Jersey. In addition, media coverage of the study continues.

Many horse people are showing they care about the future of the horse industry in New Jersey, but it is important that EVERYONE should care. If you haven't already seen a presentation, please look at the study report, the DVD and my op-ed piece entitled, "A Call for a Unified Voice: The Viability and Vitality of the Equine Industry in the Garden State Depends Upon It," from our website - www.esc.rutgers.edu. And if you have a group that would like to see our presentation, please contact the Equine Science Center at 732-932-9419. Information from the report also has been useful to the New Jersey Horse Industry Alliance, a group that is working to keep the horse industry viable in the Garden State. If you wish to support the Horse Industry Alliance's effort to keep our horse industry thriving by contacting your legislators, go to www.SaveNJHorses.com. It will only take a moment, and your voice truly does matter.

In July the way was cleared to develop a youth component for the Equine Science Center's website under the direction of the 4-H Horse Program. David Foord, program associate in Sussex County, is taking the lead in this effort, and the results of his and others' work will be posted early in the new year. Also, I am pleased to report that major renovations will be done at the Ryders Lane facility beginning with the wing used to house the Young Horse Teaching and Research Program horses. This will include the installation of soft-paver flooring beginning next spring in the entire facility. These improvements are designed to ensure safety and comfort of all faculty, staff, students and horses using the facility. Funding for this project is being made possible through the support of state strategic initiative grants, the New Jersey Agricultural Experiment Station and private contributions.

State grants and matching funds from several sources also are funding additional research projects covering other important areas, including the effects of nutritional supplements on equine inflammation and stress, manure management, research into developing biofuels from manure, composting impacts on soil and water, and agri-environmental impact of pastures and trails.

\* \* \* \* \* \*

In keeping with our mission of "better horse care through research and education," we have listened to our stakeholders who have told us that two issues of great importance are horse health and well-being and producing future leaders for the horse industry. To that end, two new courses will be available to both Rutgers students and the general public beginning in January of 2008. See Page One for details. I truly am excited about getting back in the classroom!

\* \* \* \* \* \*

I continue to look for opportunities to aid in the advancement of the Center. A team of us flew to Atlanta to discuss opportunities with executives from Merial, one of our sponsoring partners. The Center's advisory board, Rutgers University Board for Equine Advancement, (RUBEA), met over the summer to plan strategically for the future and elected a new chair, Sandy Denarski. I look forward to Sandy's leadership in moving RUBEA forward and want to thank Dr. David Meirs for his vears of service and continued commitment to our mission and vision.

And on a closing note, my summer ended up with a nice holiday in Sag Harbor, where I spent quality time with long-time friends from the hunter-jumper world at the Hampton Classic. It was especially rewarding to see so many young competitors from New Jersey riding extremely well on immaculately cared for mounts of all ages and sizes. It is my understanding that some of these future Olympic riders are considering Rutgers University as their first preference for college. Excellent choice!

#### New Courses (continued)

and associate professor of equine studies with Centenary College. Dr. Fugaro also is an adjunct professor at Rutgers. In order to enroll, students must have at least a high school diploma; it is recommended as a prerequisite that they have taken "Horse Management" taught by Sarah Ralston, VMD, Ph.D., DACVN and offered each fall semester. Certain academic prerequisites also may be needed; Dr. Fugaro will answer prospective students' questions via email at esc@njaes.rutgers.edu. "Advanced Equine Health Care" provides three academic credits as well as continuing education units (CEUs).

The course will study in depth the diseases and common emergency disorders of the horse. It will utilize the basic concepts of anatomy and physiology, apply them to clinical situations that might arise in horses, and teach students how to effectively manage many of these health-related situations.

Students will learn about "normal" thresholds as well as problems associated with the major systems in the horse. Three exams and a group oral presentation will be part of the course work. The course is recommended for equine enthusiasts with a medical interest, managers/owners of equine facilities, and students interested in medical science.

"Developing Future Leaders for the Equine Industry" will bring together a team of instructors led by Dr. Malinowski and Mary Nikola, Ed.D., director of leadership and organizational development with the New Jersey Agricultural Experiment Station.

Dr. Nikola, who teaches a two-year leadership development program through the New Jersey Agricultural Society, believes that this two-day short course will provide a dynamic sample of the longer program and will be especially valuable to younger adults who are committed to the success of the equine industry in New Jersey.

"This course is unique, in that it is focused entirely on equine interests and opportunities," says Dr. Nikola. "In addition, it marks the return of Karyn Malinowski to the classroom – and students are sure to be moved by the passion she brings to teaching."

The course will feature several well known experts in the field as well as Drs. Malinowski and Nikola. Subjects will include the value of the equine industry, networking and relationship-building, decision-making strategies, leadership practices and behaviors, building coalitions, and industry management.

As with the health care course, a high school diploma is required for enrollment in "Developing Future Leaders," but no other specific classes are required. The class offers one academic credit and CEUs.

Further information on the new courses and instructions for enrollment are available on the Equine Science Center website at **www.esc.rutgers.edu** or by calling 732-932-9271 and asking for "Registration."

## The 2007 Equine Science Update

The Equine Science Center will sponsor its annual Equine Science Update on Tuesday, December 11, 2007 from 6 to 9 p.m. at the New Jersey Museum of Agriculture on the Cook Campus of Rutgers, The State University of New Jersey.

The Equine Science Update, geared to professionals, horse owners, farm owners and managers, students, science teachers, 4-H horse program participants and educators, will include presentations highlighting the Equine Science Center's work in advancing equine health, horse management practices, and solutions to equine industry issues. Topics to be covered include:

- The New Jersey Equine Industry 2007 Economic Impact
- Manure Management Plans and Training for New Jersey Horse Farmers
- Environmental Concerns for Equine Operations
- Jersey Fresh CCI: What the Pros Feed Their Horses
- Rutgers Young Horse Teaching and Research Program
- Horse-Powered Bioenergy
- Current Research in Equine Joint Health

In addition to the Equine Science Update, tours of campus facilities will include a visit to the current crop of weanlings in the Young Horse Teaching and Research Program at 4:30 p.m. and a demonstration of the Center's high-speed equine treadmill at 5 p.m.

The seminars and tours require reservations, which can be made by calling 732-932-9419 or emailing ESC@aesop. rutgers.edu. The suggested donation for the day's activities, including a supper at 6 p.m., is \$25 for adults and \$10 for students. For additional information, directions, and a RSVP coupon, call 732-932-9419 or visit www.esc.rutgers.edu.

Visiting the
Young Horse
Teaching and
Research Program
weanlings is a
traditional part
of the Center's
Equine Science
Update. Pictured
here are RU
Aurora and RU
Valentino.



## New Sponsored Messages in Horse Publications

The Equine Science Center is focusing on the "faces" of equine research and education in a new series of sponsored articles in selected horse industry publications.

The articles (called "advertorials") will take a look at some new courses being offered by the Center (see Page One) and will take readers behind the scenes of our research and classroom programs.

According to Diana Orban Brown, director of communications,

last year's successful campaign featured news headlines from the Center, such as the launch of the Ryders Lane best management practices demonstration farm; the initiation of "Ask The Expert," which features direct access to Equine Science Center faculty; and an overview of the "Fact Sheet" service provided by the Center and Rutgers Cooperative Extension, to name a few.

"The series became so popular that people were asking for reprints of the advertorials," Orban Brown says. "And when the advertorials began to focus on Horses 2007, our educational conference held this past March, activity on our website spiked at record levels."

Building on that success, the first advertorial of the new series was an overview of the Center, titled: "RUTGERS EQUINE SCIENCE CENTER: OUR MIDDLE NAME IS SCIENCE." It detailed the work of the Center focused on current challenges facing the horse industry, including:

- The need for reliable, science-based information
- New environmental regulations
- The shortage of large animal veterinarians
- Performance-altering substances

This overview appeared in *Horse News* and will be published in other journals and magazines as the year progresses. New pieces will highlight the students and work being done by Dr. Ken McKeever, Dr. Sarah Ralston and Dr. Carey Williams, all Rutgers faculty closely involved in the equine program.

"As time goes on," says Orban Brown, "we also will feature research highlights on projects that are under way, such as research into the feasibility of turning manure into bioenergy and breakthroughs in prevention or control of inflammation."

"All of our efforts are directed at fulfilling our mantra: 'Better horse care through research and education.' If we can bring attention to our work and share our knowledge with the public at the same time, we are serving our mission," she concludes.



Extra! Extra! Read all about it! The Equine Science Center is reaching out to people everywhere through a series of informative "advertorials."

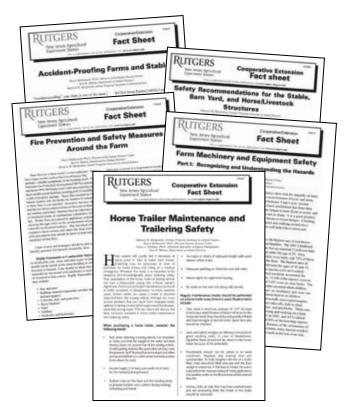
## Fact Sheets Provide Valuable Farm Safety Tips

As much as we all love horses and embrace the idea of keeping them on our own farms, farming is risky business. Statistics suggest that it is one of the most dangerous occupations. So what's a horse farmer to do? Take all reasonable precautions to ensure your facility is safe.

To help in the process, Rutgers Equine Science Center and Rutgers Cooperative Extension have issued several newly-revised and updated safety fact sheets that are available on the Center's website at **www.esc.rutgers.edu** and on the Extension website at http://njaes.rutgers.edu/pubs/.

In addition, the Center and Cooperative Extension are offering a farm safety video for \$19.95 plus \$3 shipping and handling. Produced in DVD format, purchasers will receive a full set of the safety fact sheets when they order the video. Orders may be placed by email with salinger@njaes.rutgers.edu or by phone at 732-932-9514.

According to Karyn Malinowski, Ph.D., director of the Equine Science Center, and Carey Williams, Ph.D., equine specialist with Rutgers Cooperative Extension, the fact sheets and video are comprehensive, user friendly and packed with essential advice.



Titles include:

- "Accident-Proofing Farms and Stables"
- "Safety Recommendations for the Stable, Barn Yard, and Horse/Livestock Structures"
- "Horse Trailer Maintenance and Trailering Safety"
- "Fire Prevention Safety Measures Around the Farm"
- "Farm Machinery and Equipment Safety Part I: Recognizing and Understanding Hazards" and "Part II: Preventing Machinery Accidents During Operation"

The fact sheets' authors are Dr. Malinowski, herself a horse owner; Marjorie R. Margentino, former program associate in Animal Science and farm owner; and Sara Malone, a Rutgers graduate student in the equine program whose family operates a farm in the Midwest.

"In addition to reporting some of the latest statistics and information, the fact sheets and video reflect the authors' many years of practical experience," says Dr. Malinowski. "Also taken into consideration are current laws." she adds.

For example, the fact sheet on trailering safety points out that horses transported across state lines must have a current health certificate issued by a veterinarian, and in New Jersey must have a current Coggins test. The fact sheet on farm machinery safety points out the need for a slow-moving vehicle decal if the equipment is operated on public roads.

The fire prevention fact sheet points out not-so-obvious materials that could become combustible, such as cobwebs, dust and grain dust. And for farm owners contemplating building a barn or stable, the fact sheet offers some very practical suggestions for fire prevention construction and accessories.

A full library of factsheets may be found at **www.esc.rutgers. edu/publications.htm**.

Coming in 2008 will be a series of podcasts that cover some of the material contained in the most-requested fact sheets. We anticipate that the podcasts will be downloadable free of charge from iTunes and/or iTunes U, a special service for institutions of higher learning.

Please check the Equine Science Center website frequently at **www.esc.rutgers.edu** for information about the availability of this important resource.

## Turning a Lifelong Love Into a Career

By Nettie R. Liburt First-year Graduate Student in Equine Science



Nettie Liburt and Belle take a break from making important discoveries in the world of equine research.

I'm a barn rat, and always will be! Most "horse people" know that's not a four-legged pest, but a horse-crazy kid that hangs around the barn doing chores every minute of their free time just to be near horses.

It started when a neighbor invited my mom to bring me (then a spry two-year-old) along to feed her horses. It was love at first sight! Lessons ensued, and I was soon lucky enough to have my first pony. My parents jokingly hoped I'd grow out of my "horse phase" (since horses aren't inexpensive), but now they're thrilled I didn't.

I'm fortunate to have owned a horse for most of my life. I still work hard to keep it, and I compete in hunter/jumper shows as much as I can. Horses are part of who I am, a feeling that has been confirmed many times over. I've worked in a few different industries, including broadcasting, but I never found quite what I was looking for.

Five years ago, I had a wonderful chestnut Thoroughbred mare. Eminent Appeal was my mount for the better part of my junior competitive career, elegant and kind with a heart of gold. She developed a few unusual medical problems over time: allergies to several species of trees and grass; tendonitis and Cushing's syndrome; and respiratory infections.

"Emmy" was my true inspiration to attend graduate school. In taking care of her, I became increasingly curious about treatments, sports rehabilitation, exercise physiology and nutrition. My undergraduate degree in psychology lacked some core science courses, so I had a long road to travel to achieve acceptance into graduate school.

I quit my job in network news, and back to school I went. Dr. Karyn Malinowski was an integral part of my journey. She advised me about courses I needed and served as a mentor. I successfully made up the missing classes and was admitted to Rutgers in Fall 2003. Dr. Ken McKeever taught me the importance of sound study design and scientifically credible research.

No one could have prepared me for the experience of graduate school, but it is one I value and will never forget! I gained a whole new perspective on research, and an exponentially greater appreciation for what horses are capable of, how much heart they have, and how willing they are to work for us. My master's degree work, completed in May 2005, investigated the effects of cranberry and ginger extracts on inflammation and other markers of exercise performance.

While completing my thesis, I felt in my heart that I wasn't finished. I took a break from school, but knew I would return to pursue my Ph.D. I sought the opinion of many academic equine researchers and industry professionals who all advised me to "go for it!" I am thrilled to be back in Dr. McKeever's lab, and I feel like I've hit the ground running. Things are already busy, with many learning opportunities ahead.

Rutgers is truly a top equine research university which I have come to greatly appreciate. We are privileged to have a climate-controlled treadmill lab complete with facilities for immediate sample processing. The equine faculty are renowned for their research, and the support system among students and teachers is invaluable.

I may have not taken the most direct route to get here, but I have no regrets. I've worked in other industries that I found interesting, but unfulfilling. People often ask me, "Are you going to be a vet?" No, not a vet, but a scientist who works to provide sound information that helps vets better treat their equine patients and horse people become more educated. Whether that leads me to a position in academia, industry or independent consulting remains to be seen. As I develop my research project over the next few months, I will keep my goals and the best interest of the horses in mind, as I always have. The challenge will be great, but the rewards will be greater!

## Faculty Voices: The Quest for "Horse-Powered" Bioenergy

By Donna E. Fennell, Ph.D. Assistant Professor, Environmental Science

Editor's Note: Donna Fennell, Assistant Professor in the Department of Environmental Sciences at Rutgers University, has been crazy about horses for as long as she can remember. Since coming to Rutgers in 1999, Dr. Fennell's primary interaction with the equine sector was bringing her young son to see the horses at the School of Environmental and Biological Sciences Farm—at least a monthly event! Since 2006, Donna has had a stronger link with the equine industry after beginning an investigation for the Rutgers Equine Science Center that focuses on reuse of horse waste for bioenergy production.

The equine industry produces the largest quantity of livestock waste in New Jersey. Horse owners are often located on small acreage with encroaching development, and waste disposal remains a major issue. One horse produces about 37 pounds of feces and 2.4 gallons of urine per day, for a total of about 60 lbs of waste. Most of the recoverable horse waste in the state is mixed with stall

bedding, and stalled horses require up to 20 lbs of bedding per day. Combined, this accounts for about 13 tons of waste per horse per year with bedding constituting about 25% of the weight of the waste. Rutgers Cooperative Extension is working with equine facilities to find new options for horse waste disposal. One of these options is centralized processing which would remove manure from farms where there is inadequate land for spreading and treat it in locations that pose fewer water quality risks while producing valuable end products such as compost.

The Environmental Sciences' biofuel project is addressing the feasibility of applying anaerobic digestion to horse manure to produce biofuels. Under anaerobic conditions (conditions in the absence of oxygen), a complex mixture of microorganisms converts organic matter such as horse waste to a biogas that contains either methane or a mixture of methane and hydrogen. Methane and hydrogen can be combusted as fuels to produce heat and electricity. After the digestion, the remaining waste residue could then be composted and applied to land. My group



Valdis Krumins (Post-Doctoral Associate), Brian Wartell (graduate student in Environmental Sciences), Bryan Schwab (undergraduate Bioenvironmental Engineering) and Dr. Fennell discuss borse waste biodigestion experiments.

and I are investigating the bioenergy potential of horse waste that is mixed with various types of stall bedding such as wood chips. The goals of the project include investigation of the role of the bedding choice in anaerobic digestion and increasing the efficiency of the process by combining horse waste with other wastes such as food waste.

I am working with Rutgers faculty Christopher Obropta, Arend-Jan Both and Michael Westendorf (all of Rutgers Cooperative Extension) and Valdis Krumins (post-doctoral associate). Environmental Sciences graduate student Brian Wartell and Rutgers undergraduate engineers Robin George (Biochemical Engineering), Jeff Alt, Kathleen Kang and Bryan Schwab (Bioenvironmental Engineering) have been performing laboratory experiments to examine biogas production potential from this abundant New Jersey waste. In addition, New Jersey Agricultural Experiment Station economists Brian Schilling and Kevin Sullivan are collaborating to on the economic aspects of the project. Eventually, the group will perform a pilot scale demonstration at the Rutgers EcoComplex.

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#### News From Our Platinum and Diamond Partners



Merial's EQUIOXX® (firocoxib) oral paste is a new nonsteroidal anti-inflammatory drug (NSAID) proven to relieve the pain and inflammation associated with equine osteoarthritis. Horses were rated for improvement in a field study based on

lameness, pain on manipulation, joint swelling and range of motion. 84% of the horses treated with EQUIOXX improved over the study. Merial's Peter Hanson, DVM, PhD, Dipl ACVS, says, "Improvement following EQUIOXX treatment can be observed within just a few hours of treatment. EQUIOXX provides veterinarians a long-awaited new NSAID with an excellent safety profile." Results of a targeted study showed no treatmentrelated side effects for body weight change, bleeding time, urinalysis parameters, gastric ulcer scores and renal toxicity. This prescription pain relief acts fast and lasts for 24 hours. For more information, visit www.equioxx.com.



Don't miss the opportunity to meet a pair of remarkable horses! On October 13, 2007 at Rick's Saddle Shop in Cream Ridge, NJ, "Radar, the Largest Living Horse in the World" and the 19hand, 2,300-pound "Rebel" will make an appearance. You also won't want to

miss the R.J. Classics Trunk Show from 1a.m. – 1p.m. Stop by on October 25 from 7-8 p.m. to find out "Everything You Have Ever Wondered About Parasites" in an informative and educational presentation by Merial. There's always something good going on at Rick's. Be sure to visit their website at www.saddlesource. com and join their growing email list for both their New Jersey and Pennsylvania stores.



Fort Dodge Animal Health advises that the risk of West Nile is still high in many areas of the country. Traditionally, cases of West Nile virus are highest during the

late summer and fall. It's not too late to vaccinate horses against this potentially fatal disease. Horse owners should contact their veterinarian to determine threat levels in their area and evaluate their horse's vaccination status to ensure they will have maximum protection. Innovator® is the only West Nile vaccine available in combination with eastern, western and/or Venezuelan equine encephalomyelitis - with or without tetanus - to protect against other deadly mosquito-borne diseases. Learn more at www. fortdodgelivestock.com.



Kistler Buildings is the leader in the construction of new indoor arenas and horse barns. Since 1981 Kistler

has served the mid-Atlantic region. Kistler also specializes in

additions and renovation to existing horse barns and arenas including, but not limited to, new roofing, siding, stalls, stirrup guards, windows, and doors. Kistler also sells material packages for DIY remodeling or construction. "Built on Integrity" sums up Kistler Buildings' commitment to "doing the right thing when no one is looking." Visit their website at www.kistlerbuildings. com.



Nutrena Nutrena, a sponsor of Rutgers' Young Horse Teaching and Research program

since 2000, announces Smart Grain Technology™ - a new capability in Vitality® textured horse feed that delivers superior performance and a welcome margin of safety. This breakthrough in grain-based nutrition uses the special nutrient characteristics of different cereal grains to each horse's greatest advantage, optimizing the utilization of starches and sugars in the small intestine while meeting specific energy requirements. It's all-new technology that helps minimize the risk of nutritionally-related problems while giving horses the glucose they need to replenish glycogen stores for training, exercise and competition. Discover more at www.nutrenaworld.com.

### **Upcoming Events**

★ Extra! Extra! ★ Save the Date! ★

#### **Equine Science Update**

Tuesday, December 11, 2007 New Jersey Museum of Agriculture New Brunswick, NJ

#### **Horse Management Seminar**

Saturday, January 26, 2008 Cook Campus Center New Brunswick, NJ



"Better Horse Care Through Research and Education"

Dr. Karyn Malinowski Director

Diana Orban Brown Director of Communications

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