NEWS UPDATE

EQUINE SCIENCE CENTER

"Better Horse Care Through Research and Education"

SPRING 2005

Gateway to Equine Wellness and Management: www.esc.rutgers.edu

Created to be a knowledge storehouse for equine management issues and industry news, the Equine Science Center's website, **www.esc.rutgers.edu**, has exceeded expectations as the main component of the Center's outreach effort. It is the public's access point to the vast body of knowledge available as a result of the research done at the Center.

Dr. Karyn Malinowski, Director of the Equine Science Center, remarks, "This website is meant to be a valuable tool for all people involved with horses and the horse industry, regardless of breed interest, riding discipline or level of association with horses. We hope that through this website we can deliver our knowledge to all audiences – professionals and non-professionals, students and prospective students, and youth."

Horse-oriented individuals from all over the world visit to find answers to their equine management questions. Fact sheets, along with an extensive "Frequently Asked Questions" (FAQs) section, provide information on basic and advanced topics such as identifying poisonous plants or feeding horses in training. A powerful search function makes it easy to find answers quickly. For questions not covered by the FAQs section, visitors turn to the "Ask the Expert" feature. (See "Got Questions?" on Page 2.)

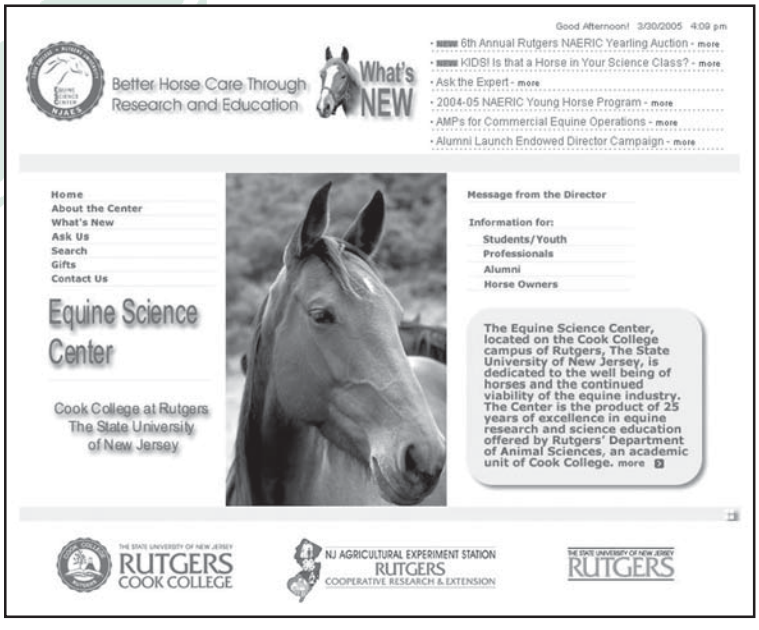
A news area contains press releases that detail developments within the Center as well as information about important regulations and health bulletins. Of these, two of the most notable are the "Agricultural Management Practices for Commercial Equine Operations" and details on how barn owners can minimize the risk of West Nile Virus. Events and helpful links also are featured.

Youth also are making use of the site. In addition to fact sheets, 4-H links, and other valuable information, visitors can view a special science feature geared to middle-schoolers: "WHOA! Is That a Horse In My Science Class?" (see Page 6).

Students and prospective students can access information about the Animal and Equine Science undergraduate program at Cook College, including the Doris C. Murphy Endowed Scholarship which is offered to women studying equine science.

A link to Cook College's Cooperative Education Program provides details on how students seeking a foothold in the equine industry can gain on-the-job experience. Continuing education course information is also offered.

The site welcomes over 150 visitors every day who spend an average of nearly 10 minutes browsing the site. Almost a quarter of them return regularly for additional information. Since the site's debut in February 2004, it has logged over 500,000 page views, with three million hits, and has served almost 100,000 visitors.



Join the Community of 50 for Equine Excellence (Page 3)

From the Clubhouse

Dr. Karyn Malinowski, Director

While driving around Monmouth County, New Jersey, the most horse-intensive county in the state, I can't help but notice the disappearance of some of my favorite horse farms. To be fair, I do see a few new ones popping up in places that had previously been vegetable, forage crop or dairy farms. But on balance, horse farms seem to be sprouting houses and "farmettes." And there is evidence that this may be true all over the country.

Even non-horse people are concerned about this erosion. As profitable farming becomes more challenging and as our rural areas become more suburbanized and urbanized, successful equine operations may be the last bastions in the battle to preserve open space.

That's why the Equine Science Center is allocating resources for a study to determine the state of the horse industry in New Jersey and to provide a blueprint for its survival and profitability. We believe this study will galvanize lawmakers and individuals engaged in horse-related businesses to begin a dialogue to preserve the industry.

In another multi-agency funded program, faculty representing expertise in water quality, nutrient and pasture management, forage and other forms of equine nutrition, manure composting, and other disciplines related to farm management and the environment will collaborate to develop a showcase horse farm that employs the latest thinking in environmental and animal husbandry principles. This showcase of effective management practices for equine facilities will be located on the Cook College campus and will become the venue for seminars and workshops that will benefit all horse people.

This kind of hands-on, practical research – coupled with vehicles designed to share our findings with the public – are becoming a hallmark of the Equine Science Center as time goes on.

More than ever we will emphasize practical applications for horse owners, breeders, managers and enthusiasts, staying true to our mission: "Better horse care through research and education."

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A tip of the helmet to journalist Nancy Jaffer, whose equestrian sports column appears weekly in the Star-Ledger. Nancy ran an article recently that called for: "A united effort with horsepower needed to save the industry." Nancy drew attention to the fact that any segment of the horse industry at risk jeopardizes all of the horse industry. It's good to hear our leaders acknowledge that horses are one industry, not disparate disciplines. We're all in this together!

Got Questions? Our Experts Have The Answers

The "Ask the Expert" area of the Equine Science Center website (www.esc.rutgers.edu) is rapidly becoming its most popular feature. Dr. Carey Williams, Extension Specialist in Equine Management with Rutgers Cooperative Research and Extension, manages the question-and-answer forum, fielding inquiries and finding answers. The service is not intended to substitute for the care and recommendations of a veterinarian, but rather to provide science-based answers to questions about horse and horse farm management.

More than 30 faculty, researchers, specialists and staff affiliated with the Center are on hand to lend their knowledge in such areas as manure and pasture management, nutrition, exercise, parasitology and reproduction, as well as equine agricultural practices and horse industry policies. Students often assist with researching the answers, all of which are reviewed by Dr. Williams for scientific accuracy.

Utilizing the feature is easy: website visitors simply click on a link which enables them to send their questions to Dr. Williams via email. Submissions have come in from across the globe, ranging from the mundane (how long can hay be stored?) to the mysterious (are the claims surrounding an exotic Chinese mushroom true?) A personal answer from either Dr. Williams or another faculty member is generally returned within a few days.

Once a month, questions and answers of particular interest are hand-picked to appear on the website — contributing to the wealth of knowledge that continues to draw horse owners to the Equine Science Center for information on keeping their horses happy and healthy.

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Photo Credits: Nick Romanenko (Page 2), Dr. Carey Williams (Page 4), K.W. Bridges (Page 6), Patty Kastner (Page 7)

Governor Whitman Named Honorary Chair

'Community of 50 for Equine Excellence' Rallies to Support Center

Individuals and organizations are rallying behind the endowment campaign of the Equine Science Center, aiming to raise $2 million to support Center programs.

With former New Jersey Governor Christine Todd Whitman — an enthusiastic equestrian and New Jersey farm owner — as honorary chair, the endowment campaign is receiving wide support from the various equine groups and disciplines throughout the state.

Calling themselves the "Community of 50 for Equine Excellence," donors are pledging gifts at the President's Council level for the next four years. President's Council members traditionally have made gifts of $10,000 or more through the Rutgers University Foundation. Gifts can be in cash; in items of value, such as stock and securities, personal property, real estate, equipment and "in-kind" donations; bequests; annuities, insurance, planned gifts; and other assets.

The endowment campaign is spearheaded by Rutgers alumnus Dr. David Meirs II of Cream Ridge, NJ. Dr. Meirs, a prominent veterinarian and breeder, also is chair of the Rutgers University Board for Equine Advancement, a group that advises the Equine Science Center and equine program of the Department of Animal Sciences at Rutgers' Cook College and the New Jersey Agricultural Experiment Station.

"The Community of 50 for Equine Excellence is a dedicated group of people and organizations that understand the importance of supporting serious scientific research and also want to have a voice in policy-making as it affects horse farms and the horse industry in New Jersey and in this region," says Dr. Meirs.

"We expect the 50 people and groups who step up to this challenge to be leaders in the community. Many of them will be motivated by the desire to help ensure preservation of open space. Others will have ties to the horse industry or recreational equine sport; and others will join this community simply because they believe – as Winston Churchill and, later, Ronald Reagan reminded us – 'the outside of a horse is good for the inside of a man.'"

Those interested in joining the Community of 50 may contact Diana Orban Brown at 732-932-9419 or via email at orban@aesop.rutgers.edu.

In addition to the Community of 50 for Equine Excellence, scores of smaller gifts are coming into the Equine Science Center, and all are welcome. Several groups, including veterinarians, amateur and professional horsemen, horse and pony clubs, and individual horse or farm owners have sent more than $75,000 in gifts to the Center in recent months.

Among the organizations supporting the Equine Science Center so far this year are the New Jersey Association of Equine Practitioners, the New Jersey Professional Horsemen's Association, the Standardbred Pleasure Horse Organization, the Somerset County Horse and Pony Association, and the New Jersey Horse Council.

Alumni Support Center Endowment

Dr. Christopher Puzio, a 1992 graduate of Rutgers' Cook College and a veterinarian in Rockland County, NY, heads up the alumni portion of the Equine Science Center's $2 million endowment campaign. Dr. Puzio, who with his wife Bridget operates two clinics specializing in small animals and exotics, was a student of Center Director Dr. Karyn Malinowski. And even though he did not opt for a career in equine veterinary medicine, his work with horses in Dr. Malinowski's lab inspired him to earn his veterinary degree and dedicate himself to the well-being of animals.

Christopher initiated a mail solicitation of nearly 1,400 fellow Animal Science graduates last fall, asking their support for the campaign. The letter initiative netted gifts averaging $165 per donor; altogether alumni have given more than $16,000 in gifts this past year.

The Equine Science Center is dedicated to the well-being of horses and the continued viability of the horse industry.

Student Voices: Research is Fun – the People and the Horses Are Great!

By Diane Sickles, Class of 2005

My four years at Cook College will stay with me for years to come. I have met remarkable people and have had the opportunity to partake in a variety of classes, clubs, and extracurricular activities. The highlight of it all has been my involvement at the New Jersey Agricultural Experiment Station farm on the Cook College campus doing research with horses.

Ever since I was young, I have had a strong interest in horses. It has been a dream of mine to study and work with horses and maybe one day have a barn of my own. But I hadn't had much exposure to horses. When I was younger, I used to ride, but that was long ago.

My equine experience began my sophomore year, when I had the opportunity to work with a filly for Ag-Field Day. I learned the basics of handling, restraining, grooming, and other horse management practices. In the spring of my junior year, I enrolled in equine research with Dr. Kenneth McKeever, where I was destined to help with master's and Ph.D. research projects.

As the time approached to start this research course, I started to worry that I wasn't experienced enough or would be thought of as the total rookie in the class. When I got there, though, I found that I wasn't the only one who was a beginner and that there were plenty of other students who were new, too. The faculty and the graduate students were more than willing to take time to teach us and include us in everything, because that was what we were there for — to learn! Now, after being an equine researcher for more than a year, I am very comfortable working with the horses and students, and I am also helping to teach the newer students all the things that I learned.

This experience has been truly amazing for me. Every day that I went to the farm I learned something new. This included basic equine first aid and veterinary care, catheterization, ultrasound assistance, proper handling and restraining, as well as a variety of laboratory sampling procedures and data analysis, among other things. Since my junior year, I have enrolled in two more semesters of research in addition to working over the summer as the equine Teaching/Research Assistant, and I am currently working with Dr. Carey Williams and her nutrition and exercise physiology studies.

Another great bonus was winning the Doris C. Murphy Scholarship for my senior year. The award is given to Rutgers women pursuing equine studies. Since I held jobs all the time I was in school, the scholarship dollars were a very welcome and much appreciated boost and a nice reward for working hard.

I know that if I went to any other school, I would not have gotten this unique opportunity… or the incomparable chance to work with horses. For any student who needs experience-based credits, I definitely recommend research. You learn so much, and the best part about it is that you get to do a lot of hands-on work. Research is fun, the people are great, the horses are great, and it's rewarding to know you helped with a graduate/Ph.D.-level study!

Now that I am graduating in May, I am investigating internships and jobs in the equine field. My plan is to take the knowledge I acquired down at the farm and use it in the real world, hopefully landing a job working with horses. I will miss Cook College very much, but mostly, I will miss my research professors (Dr. McKeever and Dr. Williams) and all of the great horses that I was able to work with. Thank you all for this wonderful experience!

Diane Sickles is an Animal Sciences major with a minor in Equine Science. Here she poses with one of her "lab assistants," Cascade.

Faculty Voices: Experts Look for Real Solutions to Real-Life Problems

A few months back, a freelance journalist was assigned to write an article about one of our Equine Science Center faculty. The article began with a description of the stereotypical academic: "strutting around our campuses stroking their beards and speaking exclusively in polysyllables." Of course, the article went on to debunk that myth.

Far from "tweedy academics," Equine Science Center faculty are more likely to show up at work in overalls and steel-toed boots. Their science often takes them into the field – quite literally.

This is especially true now that the number of Equine Science Center-affiliated faculty and staff has grown to 31 and their expertise has expanded to cover such essential areas as water quality, manure and pasture management; pasture grass breeding; forages; West Nile Virus; weed and pest control; agricultural economics and financial management; nutraceuticals; right to farm and land management; soil fertility and a host of traditional disciplines, including equine nutrition, exercise physiology, reproduction, nutrient waste composting, environmental issues, parasitology, barn and farm management and other important concerns.

The faculty team represents various departments and academic disciplines at Rutgers' Cook College and Rutgers Cooperative Research and Extension. A complete list of affiliated faculty, along with their areas of expertise, appears on the Equine Science Center website at www.esc.rutgers.edu. The list can be accessed via the "About the Center" menu item on the home page.

Horse people have easy access to the expertise of our faculty through the "Ask the Expert" service on the Equine Science Center website (see "Got Questions?" on Page 2.) Questions best suited for the faculty to answer are geared to horse nutrition and farm management. In addition, several faculty research projects will have a direct benefit for horse owners and the horse industry in New Jersey and, in some cases, around the country. Current projects of the Center include:

"Agricultural Management Practices for Equine Operations" – a comprehensive report on effective policies and procedures for keeping horses, including stocking rates, forage guidelines, fencing recommendations, strategies for keeping horse shows and events environmentally friendly and other useful suggestions, many of which are likely to be incorporated in farm management rules and regulations. A 27-page document detailing these practices can be downloaded free of charge from the Equine Science Center website.

Dr. Carey Williams performs an ultrasound scan on Meta Merchant in order to determine the horse's body fat percentage.

Development of a "model" horse farm – A new initiative just getting under way this year is the planning and execution of a "showcase" horse farm, using the 40 acres of land, pastures, and barns located on the Cook College campus near Route 1 in New Brunswick. This demonstration facility will employ science-based procedures for dealing with stormwater runoff, compliance with environmental regulations, wetlands protection, manure composting, safety fencing, pasture rotation and other issues. In addition, various equine pasture grasses will be tested for durability and palatability. As the model farm is developed over the next two years, it will be the site for farm management how-to workshops and seminars, and will be designed to keep horse people up to date on changing regulations and techniques.

Rehabilitation of the turf course at Monmouth Park – New Jersey is looking forward to hosting the prestigious Breeders' Cup thoroughbred races in 2007 at picturesque Monmouth Park Racetrack. To help prepare for this world-class event, the Equine Science Center put officials at Monmouth Park in contact with faculty at the Turfgrass Center to manage the rehabilitation and rebuilding of the turf course at the track. Work will begin this year to allow the new turf course a chance to "mature" in anticipation of the Breeders' Cup, which draws entries from all over the world.

"Economic Impact of the Horse Industry and Blueprint for Its Future" – A team of Equine Science Center faculty will be collaborating in a study to determine the impact and importance of the horse industry in New Jersey and to recommend ways horse people can preserve the industry through increased efficiency and profitability.

Continued on page 8

Equine Science Update 2004:

By Lillian Shupe,
Rutgers' Cook College
Class of 1989
Senior Contributing Editor,
Horse News

The Equine Science Center's 2004 Science Update touched on findings from the year's body of research. The key topics were West Nile Virus carriers and prevention, forage, and a possible connection between exercise and appetite.

House sparrows carry West Nile, too

West Nile Virus prevention has focused on getting rid of mosquito breeding grounds. Horse owners should also look at the birds in their barn. House sparrows were found to be competent hosts for the virus in a study done by Lisa Reed from Rutgers Mosquito Research and Control. Other birds such as starlings and rock doves could carry the disease but not as efficiently as the sparrows.

Before developing a plan to eradicate the little brown birds, check with the U.S. Fish and Wildlife Service to make sure nothing you do violates the Migratory Bird Treaty Act. Killing a bird protected under the act could result in $15,000 fine and jail time, said Reed. There are non-lethal ways of chasing the birds away, such as putting noisemakers or Mylar streamers in areas they like to congregate. Or, try blocking access to nesting sites (usually on ledges) and horse feed.

WHOA! Is That a Horse In My Science Class?

Ask children what comes to mind when they think of horses, and they might say "cowboys," "The Black Stallion" or even "Smarty Jones." But would they say "science, learning, and discovery?" They might if they saw the Equine Science Center's *RutgerScience* newspaper feature in December 2004, entitled "Whoa! Is That a Horse in My Science Class?"

An initiative of Rutgers University Relations, *RutgerScience* is the award-winning brainchild of Janice McDonnell, program manager for Rutgers' Institute of Marine and Coastal Sciences, and children's science book author Bill Haduch.


RUTGERSCIENCE

COOL AND AMAZING RESEARCH FROM THE STATE UNIVERSITY OF NEW JERSEY

WHOA!

Is that a HORSE in my science class?

Equine Science 101

It's AMAZING what you

The full-color, full-page newspaper feature is geared to middle school students and runs in all seven Gannett New Jersey newspapers: the Home News Tribune, Courier-News, Asbury Park Press, Daily Record, Courier-Post, Ocean County Observer and The Daily Journal. An additional half-million copies are delivered to New Jersey classrooms through a national nonprofit program called "Newspapers in Education."

The *RutgerScience* page about the Equine Science Center was a lively summary of our exercise physiology, reproduction and nutrition research, along with fascinating facts and figures and lively illustrations to spark young minds.

But in case you – or your youngsters – missed it, you can still access it via the Equine Science Center website at www.esc.rutgers.edu. It features a futuristic interactive control panel where kids can "beam up" different articles on the Center's work. And the same full-page mini poster that ran in the paper can be downloaded for class projects or for a kid's bulletin board.

Research Findings

Some mosquitoes bite all night

In another study, Jennifer Gruener, also from Rutgers Mosquito Research and Control, studied which species of mosquitoes fed on horses and when. She found 12 different mosquitoes, most of which would also feed on birds. If the insect bites an infected bird and later a horse, it can pass the virus on. Most of the mosquitoes fed during dusk and dawn, but some bit during the night, she found. Keeping horses inside won't prevent exposure. Many mosquitoes had no problem coming inside for a meal although fewer fed indoors than out.

Even if barn owners get rid of mosquitoes or limit their horses' exposure, they should still vaccinate, said Gruener. Even though a vaccine is now available for West Nile, continuing mosquito research will make it easier to deal with the next illness that comes, she said.

New findings on forages

Until recently, the focus on equine nutrition has been on grain. But Dr. Sarah Ralston, VMD, PhD, dACVN is now turning her attention to forages. "Forages can be a major source of vitamins, minerals and energy," said Dr. Ralston. Most horses can live on hay and water if salt is provided, she said.

Not all hay is the same though. The nutritional value of hay depends on where it was grown and when and how it was harvested, she said. When harvested after being stressed, such as after a frost or drought, hay will have a higher sugar content. Some hays are very low in protein and don't meet the needs of adult horses, much less growing youngsters.

Sometimes hay is also much higher in sugar than previously thought. High sugar can cause problems in certain horses, such as those that are insulin resistant. Soaking the hay in water before feeding reduces the sugar content making it safer for these horses. Getting quality hay is not always easy. "There's a difficulty in harvesting hay at its prime in New Jersey," said Dr. Ralston. If you are not sure of the quality of your hay, have it analyzed, she added.

Having soil analysis done won't tell you if your pasture is good. "You need to check the grass," said Dr. Ralston. Grass can have different nutritional value depending on the time of the day it is eaten. Location is also a factor. If you have sandy soils, any fertilizer you apply is likely to run downhill. Therefore pastures in the low lying areas may be better than on the top of the hills.

Exercise's role in appetite, and development of ulcers

Why do racehorses go off their feed? That is what Mary Beth Gordon, a graduate student, set out to discover. Her theory: Intense exercise will curb appetites.

In the study, one group of horses jogged about five miles per day while the other group was not exercised. In the exercising group, some horses were also worked more intensely, including galloping. All the animals received free choice hay cubes and the amount they ate was measured daily.

Feed intake decreased in both groups over the course of the study. The mares gained weight and as they did they began to eat less. The horses that underwent intense exercise showed a larger decrease in feed consumption after being worked. Seven of eight horses in the exercised group developed ulcers. None of the control horses got ulcers. All the mares received regular turnout.

Gordon was surprised to see that even the lightly-exercised horses developed ulcers. The exercise they did was similar to the work a dressage horse might do on a daily basis. Gordon concluded that intense exercise does decrease a horse's appetite, which means affected equine athletes may not get the nutrients they need for optimum performance. She also concluded that horses will adjust their feed intake after reaching a certain weight to maintain energy balance. Her next step is to factor the ulcer problem into the equation and look into the use of ghrelin, a hormone related to appetite control, to get equine athletes to eat better.

Reprinted with permission from *Horse News*

Remembering beloved animals with a gift

Have you ever wanted to honor the memory of a favorite horse or pet?

Dr. Dan Keenan, a popular veterinarian from Bordentown, NJ, encourages clients to do just that. And he is proposing to fellow members of the New Jersey Association of Equine Practitioners that they make contributions to the Equine Science Center whenever an equine patient has to be euthanized.

"We all work very hard to keep our four-legged patients sound and healthy, but sometimes age or injury or illness force us to humanely end their lives," says Keenan. "Many owners ask me to suggest a suitable recipient for a memorial donation, and I have often directed them to the Equine Science Center."

Now Keenan is taking it one step further. In a letter to the New Jersey Association for Equine Practitioners, he is asking that the veterinarians themselves make a gift to the Center in memory of an animal they have had to euthanize. "Ideally, they will send a note of condolences with the information about their donation to the owner – it is a very good way to help heal the loss and make a contribution to horse health at the same time," he says.

"When I have made a gift to the Center in the name of a favorite animal, I invariably get a call or note of gratitude from the owner, as well as from the Center," Keenan adds. "People appreciate that their animal lives on in the research and outreach of the Center."

The Equine Science Center also sends a note of condolence and gratitude to the owner on behalf of the veterinarian.

Individual owners who make a contribution of $500 or more in memory of a horse or pet will be included in a memoriam section of the Center's website, listing the animal's name and year of death. Further information about this program is available from Diana Orban Brown, orban@aesop.rutgers.edu.

Faculty Voices *Continued from page 5*

The last study of the state's horse industry was done in 1996. This current study, while seeking to update key data, will be the first of its kind to formally analyze the economic importance of horses to the people of the state, regardless of whether they are urban, suburban or rural residents and whether or not they own horses.

New discoveries about inflammation and other conditions in horses – Equine athletes – like their human counterparts – are prone to inflammation and soreness after exercise. Several projects are under way to determine effective treatments for inflammation, some of which may utilize common "nutraceutical" substances such as cranberry juice, black tea or orange peel. Faculty are also continuing studies of performance-altering drugs, antioxidants and equine nutrition, as well as developing tests for identifying at-risk equine pregnancies.

Upcoming Events

Equine Management Update
"Rules, Regulations and Risks You Should Know About"
1 p.m., Tuesday, December 13, 2005
New Jersey Museum of Agriculture
New Brunswick, NJ

Equine Science Update
6 p.m., Tuesday, December 13, 2005
New Jersey Museum of Agriculture
New Brunswick, NJ

Horse Management Seminar
Friday, February 10, 2006
Cook Campus Center
Rutgers, The State University of New Jersey
New Brunswick, NJ

★ Extra! Extra! ★ Save the Date! ★
Horses 2007 Conference and Expo
Saturday, March 31, through Monday, April 2, 2007
Cook College Campus
Rutgers, The State University of New Jersey
New Brunswick, NJ

"Better Horse Care Through Research and Education"

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