

# RUTGERS UNIVERSITY

# EQUINE SCIENCE QUARTERLY



From Our Stable To Yours  
Fall 2022

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## Rutgers Equine Science Center Launches National Survey

**T**o learn more about the current information, education, and research needs of the U.S. equine community, the Rutgers Equine Science Center just launched a U.S.-wide online survey.

Needs assessment surveys, like this present one, provide valuable insights into topics of interest and importance to the equine industry, and they shed light on the demographics of the equine community.

While this information is commonly used to create new equine research and extension programs, it

is also critical for existing extension programs, like the ones that the Rutgers Equine Science Center provides.

Through regular conversations with the equine community, for example through surveys like this present one, the Rutgers Equine Science Center ensures to stay up-to date with the communities' most pressing needs, and to provide the most useful and relevant resources for members of the equine industry.

To date, the Rutgers Equine Science Center has already conducted two needs assessment surveys, one in

# From The Clubhouse



We hope that everyone  
is able to join us at  
our next event, the  
“Evening of Science  
& Celebration” on  
November 3rd!

Hi Friends,

The Equine Science Center is excited to announce the fact that we will be hosting a new Jersey Equine Industry Summit on March 16, 2023. The event is free and will give equine enthusiasts a chance to make their voices heard during our breakout sessions.

Our keynote speaker is Dr. Jill Stowe, from the University of Kentucky. Dr. Stowe is an economist who promises us a great lecture on key tips for keeping costs down for equine operations and horse owners. Be sure to take a look at the Save The Date flyer on **Page 15**. Hope to see you there!

We also are conducting right now a needs assessment survey of equine enthusiasts nationwide. See the feature story on the **Front Page**. We need your support to be able to address the challenges facing you!

A BIG welcome to two new equine-related positions in the Department of Animal Science and the Equine Science Center. Dr. Taylor Ross is a new Teaching Instructor this fall and Dr. Alisa Herbst is a new Post-doctoral Associate working with me and Ken McKeever.

We are expanding the equine emphasis in

the department! Good news for YOU and all of our students. Please see Dr. Ross' story on **Page 10**, and be on the lookout for Dr. Herbst's story in the Winter Edition of the Equine Science Quarterly.

We are SO excited to invite you all back to campus for our “Evening of Science and Celebration”. This year features Dr. Frank Andrews from Louisiana State University speaking about treating gastric ulcers in horses.

Dr. Andrews has done more research on treating gastric ulcers in horses than anyone I know. We also will have presentations of the Spirit of the Horse award which is going to Dr. Octavia Brown, the Gold Medal Horse Farm award which is going to Stoneleigh Farm, and a special resolution to Assemblyman Ronald S. Dancer who served the equine industry tirelessly before recently passing away.

The event is Thursday, November 3 at the Cook Student Center. Please find the registration details on **Page 5**.

Dr. McKeever and I had the pleasure of collaborating with Team Miller at Gaitway Farm since we last spoke to take blood samples before and after exercise in Standardbred racehorses to look at the hormone osteocalcin which could potentially predict bone health and athletic performance in horses.

We are collaborating with colleagues at Columbia University who are studying this in human athletes. See Ken's comments in “From the Lab” **Page 8**.

And finally, Kyle wouldn't let me get away without mentioning the story he did on the 2021 Harness Horse Youth Foundation's Service to Youth Award, which I received in August. Please find the picture and story on **Page 6**.

Stay well, enjoy the cool-down (finally), and we hope to see you on November 3!

Best In Good Health,  
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](http://www.njfb.org).



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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](http://www.nj.gov/agriculture)



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## UPCOMING 2022 EVENTS

### Evening of Science & Celebration

Thursday, November 3, 2022

Cook Student Center  
Rutgers, The State University of NJ  
New Brunswick, NJ

[esc@njaes.rutgers.edu](mailto:esc@njaes.rutgers.edu)

### 2023 Horse Management Seminar

Wednesday, February 8, 15, 22, 2023

SAVE THE DATE!

[carey.williams@rutgers.edu](mailto:carey.williams@rutgers.edu)

### New Jersey Equine Summit

Thursday, March 16, 2023

SAVE THE DATE!

[esc@njaes.rutgers.edu](mailto:esc@njaes.rutgers.edu)

### Ag Field Day at Rutgers Day

Saturday, April 29, 2023

Red Barn - Cook Farm  
Rutgers, The State University of New Jersey  
New Brunswick, NJ 08901

[esc@njaes.rutgers.edu](mailto:esc@njaes.rutgers.edu)

For more events, visit our website @ [esc.rutgers.edu](http://esc.rutgers.edu)

# Rutgers Equine Science Center Launches National Survey

Continued from pg. 1

2002, and one in 2016.

The 2016 survey showed that the Center's extension programs reached the equine community in New Jersey and beyond.

While mostly participants were from the tri-state area (New Jersey, Pennsylvania, New York), 12 other states were also represented, and 96% of respondents indicated an awareness of the Rutgers Equine Science Center.

In the survey questionnaire, participants were asked to rank the importance of the five focus areas of the Rutgers Equine Science Center: 1) Equine Health and Well-being, 2) Land Use Policy and Management, 3) Integrity of the Equestrian Sport, 4) Economic Growth and Industry Sustainability, and 5) Environmental Stewardship.

The results showed that all five areas were highly important to the participants, which reaffirmed the appropriateness of the Center's programmatic focus areas. In addition, the survey yielded many valuable comments concerning how the Center could further improve its usefulness to horses and their owners.

Now, six years after the last needs assessment survey, it is time to conduct another one.

Much has happened since 2016; most notably the COVID-19 pandemic, which also affected the equine industry. Whether the current focus areas of the Rutgers Equine Science Center are still the five most relevant ones, will be revealed by the Center's latest needs assessment survey.

The 2022 survey has four main goals: 1) to affirm the Center's focus areas, 2) to characterize the groups that constitute the equine community, 3) to identify the information sources that the

equine community uses, and 4) to determine future information, education, and research needs of the equine community.

The information obtained through this survey will not only be of great value to the Rutgers Equine Science Center, but also to other equine extension programs, as well as to equine scientists, when planning new research studies.

"We're looking forward to the exciting information that our 2022 needs assessment survey will provide", said Dr. Malinowski, Founding Director of the Rutgers Equine Science Center. "Much has changed since 2016, and the results of this survey will be very important for the Rutgers Equine Science Center and other U.S. outreach programs", she added.

The 2022 needs assessment survey is open to all members of the equine industry from horse owners and equestrians to those running equine-related businesses. If you are a current member of the U.S. equine community and you are over 18 years of age, you are invited to participate in this important survey project.

The survey questionnaire is now live, should only take about 10 minutes to complete, and will remain open through November 1st, 2022.

"Everyone's opinion matters for this project", emphasized Dr. Malinowski in an interview about the 2022 needs assessment survey.

The results of the survey will be presented at the New Jersey Equine Summit on March 16th, 2023.

More information about this event will become available in 2023, so stay tuned for updates on the Equine Science Center's website, as well as social media outlets.



THE EQUINE SCIENCE CENTER PRESENTS

# *An Evening of Science & Celebration*

*Thursday, November 3rd, 2022*

*6:00pm to 9:00pm*

Cook Student Center, 59 Biel Road,  
New Brunswick, NJ 08901



**Keynote By**

**Dr. Frank Andrews**

*From Louisiana State University*

*"Dietary Management of  
Gastric Ulcers in Horses"*

## ***Presentations***

Welcome & Equine Science Center  
Update

Keynote Address

Research Updates

## ***Awards***

The Gold Medal Horse Farm Award

The Spirit of the Horse  
Award Presented To  
Dr. Octavia Brown



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**RUTGERS**

New Jersey Agricultural  
Experiment Station

***Event Registration Closes: THURSDAY, OCTOBER 27<sup>TH</sup>, 2022***

To register, please go on-line to: [go.rutgers.edu/Evening2022](https://go.rutgers.edu/Evening2022)

Event fee: \$35 for adults & \$15 for full-time students  
Please remit payment & mail to: Rutgers Equine Science Center  
57 US Highway 1, New Brunswick, NJ 08901-8554



Dr. Karyn Malinowski is presented with the 2021 Harness Horse Youth Foundation's Service to Youth Award in the winner's circle at the Meadowlands Racetrack in East Rutherford, New Jersey. (Photo courtesy of Lisa Photo)

# Dr. Karyn Malinowski Receives The 2021 Harness Horse Youth Foundation's Service to Youth Award

**D**r. Karyn Malinowski, founding director of the Equine Science Center at Rutgers University, received the 2021 Harness Horse Youth Foundation's Service to Youth Award on Friday, August 5th, 2022.

Her staff and friends joined Dr. Malinowski as she was presented with the award by Executive Director of the Harness Horse Youth Foundation (HHYF), Ellen Taylor, during a ceremony at the Meadowlands Racetrack.

"Dr. Malinowski's passion for harness racing and dedication to educating youth through her work at Rutgers is unmatched," said Allison Conte, HHYF President. "She and HHYF have

collaborated for years so her selection as this year's recipient was an obvious choice and perhaps a bit overdue."

Dr. Malinowski spent much of her career working with youth in 4-H programs, and with her students and staff helped to develop the famous website portal, "Equine Science 4 Kids!"

The site engages youth around the globe as they learn about the basics of caring for and managing horses. Her extension project entitled, "Careers in the Green Industry: Youth Sow Seeds for Their Future," which involved horses and adjudicated youth, has served as a model for similar programs worldwide.





Dr. Karyn Malinowski gives a tour to New Jersey 4-H members, and their parents, in 2020. During the tour attendees were treated to a preview of the research being conducted at the Equine Science Center.

Her connection to harness racing was spurred on by a harness driving demo at the Horse Park of New Jersey when she had the opportunity to drive Niatross, one of the most notable horses in harness racing history.

From there she would go on to compete in amateur races, eventually winning a race with a record-setting pace as the second-fastest time for a female driver at the Meadowlands (the fastest time being held by professional driver Jacquie Ingrassia).

Dr. Malinowski has served as a faculty member

at the School of Environmental and Biological Sciences since 1978 in various roles, including Extension Specialist in Equine Sciences, Animal Sciences Professor, Founding Director of the Equine Science Center, and the Director of Rutgers Cooperative Extension.

Her research and extension programs concentrate on improving the equine athlete's well-being and quality of life while ensuring the equine industry's vitality and viability, both statewide and nationally.



For  
Release



The Rutgers Equine Science team visited Team Miller at Gaitway Farms to take blood samples from 16 horses prior to and after exercise, as we collaborate with colleagues at Columbia University.

Lab Notes - McKeever

# From The Lab:

Osteocalcin response  
to exertion in the  
horse

Malinowski's  
Lab

Collaborators from other  
Universities

McKeever's Lab

Horse  
Treadmill

Williams' Lab

THE TOP 5  
TAKE-A-WAYS

#1

**Osteocalcin, a protein hormone, plays an important role in muscle metabolism during exercise.**

#2

**Initial work conducted at the Equine Exercise Physiology Lab demonstrated that osteocalcin increases in response to steady state exercise.**

**O**steocalcin is a protein hormone synthesized and secreted by the osteoblasts in bone. Most people only think of osteocalcin's role in bone metabolism where the carboxylated form binds calcium.

However, the uncarboxylated form of osteocalcin that circulates in the bloodstream, acts as a hormone elsewhere in the body where it exerts signaling effects in the pancreas, fat, muscle, testes, and brain (Karsenty and Olsen, 2016).

Recent work by the group at Columbia University has demonstrated that osteocalcin plays an important role in muscle metabolism during exercise and that its signaling effect in muscle fibers is necessary for optimal adaptation to exercise (Mera et al., 2016).

Data from mice demonstrate that its effects are mediated via interleukin 6, a myokine that has actions in multiple tissues. We are unaware of any published studies of the role of osteocalcin in muscle metabolism during exercise in horses. To answer this question the team from Rutgers entered a new collaboration with researchers at Columbia University.

Initial work conducted in the Rutgers

Equine Exercise Physiology lab has shown that circulating osteocalcin concentrations increase in response to moderate steady state exercise.

That work was performed on a limited number of horses to optimize assays and initially characterize the osteocalcin response to exertion in the horse. More recently the team from the Equine Science Center was able to collaborate with Miller Racing team to collect blood samples from 16 Standardbred horses (8 males and 8 females) before and after an acute bout of training exercise.

Three blood samples were collected from the jugular vein via vacutainer. Samples were transported back to the lab where plasma was harvested and sent to our collaborators at Columbia University for analysis.

Ultimately, the goal is to use the physiological similarities between horses and humans to better understand the role of osteocalcin in the beneficial adaptation of muscle to exercise.

The practical application of that information will lead to future studies that can address possible treatments for a wide range of muscle related disorders affecting both species.

**#3**

**The practical application of this information will lead to future studies.**

**#4**

**The Equine Science Center recently collaborated with Team Miller Racing Stable to collect blood samples in 16 Standardbred horses before and after a 4-mile jogging session.**

**#5**

**The goal is to use the physiological similarities between horses and humans to better understand osteocalcin's role in the adaption of muscle to exercise.**





# *THE DEPARTMENT OF ANIMAL SCIENCES AND THE EQUINE SCIENCE CENTER WELCOME DR. TAYLOR ROSS*

**D**r. Taylor Ross, a native of Nebraska, joined the Department of Animal Sciences as a Teaching Instructor this fall. She comes to Rutgers University after completing her Ph.D. at Texas A&M University.

In her new role, Dr. Ross will teach a number of undergraduate courses including Animal

Welfare, Animal Assisted Therapies, and Horse Management. The opportunity to have a 100% teaching role in her new position is what brought Dr. Ross to New Jersey.

“It’s really hard nowadays to find a 100% teaching job,” said Dr. Ross, “especially at a big university like Rutgers”.









Dr. Taylor Ross with her mom and husband at the Aggie Ring Statue in College Station, TX on the Texas A&M campus, where Dr. Ross received her PhD degree.

While she previously thought she might end up at a smaller school, Dr. Ross is very excited that she landed at Rutgers instead.

During her job interview she was not only impressed with the faculty members from the Department of Animal Sciences, but also with the farm located on Cook Campus. Being on campus now and meeting the students has reinforced the idea that she made the right decision.

As an R1 institution, Rutgers was especially appealing to Dr. Ross and helped fuel her excitement in accepting the job. These types of classifications are based on the amount of research funding the university brings in, and the amount of high-caliber research conducted at the university. Essentially an R1 university is the top of the top.

“I knew I didn’t want to be a principal investigator and just be in the lab,” shared Dr. Ross. “I wanted to do more teaching but being at a big school like this offers a lot of other things for our students to do and opportunities to build collaborations between research and teaching.”

Dr. Ross already has some ideas for collaborations and research in the Animal Sciences department. One of these is to increase student involvement at the Rutgers Farm Store.

The Rutgers Farm Store is open on Friday afternoons, and offers a variety of products raised and produced right here on campus. Dr. Ross thinks there is an opportunity to increase student involvement at the farm store.

“We see an opportunity to be able to get some students in there, especially ones that might be interested in Ag marketing and tourism,” She says. “They might be willing to do some projects and work at the store to supplement the farm staff. But mostly it would give students opportunities to try new things and be involved with selling of Ag products.”

Dr. Ross brings this same level of excitement and passion to all her pursuits as a new member of the Department and the Center. She’s always looking for new partnerships and ideas.

Something that she is particularly interested

in is bringing more 4-H events back onto campus. She hopes this will help 4-H'ers see the amazing programs and resources Rutgers has to offer, which will then encourage these young people to pursue a degree at Rutgers and become involved in the Department.

Dr. Ross has a long history with teaching and 4-H. She was an active member of her 4-H program growing up in Nebraska and was always surrounded by animals. She rode in Pony Club and 4-H, as well as competitive trail riding where you ride 40 to 60 miles in a weekend.

She competed at the county and state level with her horse. 4-H is also where she discovered her interest in horse knowledge through things like horse bowl, horse judging, and hippology.

Her active participation in these activities meant she was able to compete at Western Nationals in several of these events and then go on to help coach other teams.

Dr. Ross shared "I would help the kids behind me. 4-H really set me up for the teaching that I would be doing and am still doing."

She is thankful for her time as a 4-H member, and as a member of the horse community. This is where she made many of her friends, and looks back on the communities she was a part of with great affection. It is this sense of community that drew her to horses, and one of the reasons that keeps her excited and involved.

After high school, Dr. Ross would continue to follow her passions for teaching and animals by attending the University of Nebraska - Lincoln (UNL) for both her bachelor's and master's in Animal Science.

Even as an undergraduate, Dr. Ross was interested in teaching and mentoring her peers. She worked at the student success center in the department, and was a teaching assistant for several classes.

In her spare time, she stayed very involved with 4-H and continued to coach horse bowl teams in her home county.

After receiving her masters, she decided that she

wanted to continue her education, and moved to Texas to work on a Ph.D. at Texas A&M University. Dr. Ross counts herself lucky to have landed a spot with Dr. Dunlap who was looking for someone to work on pedagogy in animal science education.

As a Ph.D. student, she continued to do a lot of teaching in addition to focusing her research on education. This training in teaching and teaching methods would prepare her to step with ease into her new role at Rutgers University.

"I'm really excited to be doing a lot of teaching, and to have freedom in choosing how I teach," said Dr. Ross. "I'm also excited to teach a lot of different topics here at Rutgers".

The transition to New Jersey has brought some changes with it. Texas and Nebraska have, in general, much bigger production animal agriculture industries. This means more students come into college with more background knowledge and hands-on experience.

Dr. Ross has noticed that the students at Rutgers are much more excited about learning all of the



Dr. Taylor Ross with her horse Sid. Sid is the horse she has had since she they were both 8 years old, growing up together in 4-H and other events over the years!





Dr. Taylor Ross riding a mule, named Dingus, through the beautiful landscapes of the Grand Canyon during her trip with her mother and best friend.

information, since they don't necessarily have the background knowledge and experience.

She shares that she is "looking forward to doing more hands-on classes at the farm like sheep and goat handling in the spring".

Over the years, Dr. Ross has been lucky enough to squeeze in some exciting adventures traveling around the world.

One of her favorite trips was a trip she took in college with the educational psychology department to a conference in South Africa.

During the trip she kept a tally of how many

animals she saw. The list was quite long as the trip included a visit to the Pilanesberg National Park, known for its safari tours.

Another favorite memory for Dr. Ross was a trip to the Grand Canyon with her mom and best friend.

They took in the spectacular view from atop mules, rode down into the canyon, and spent the night at the bottom before riding back up again.

"There's no better way to the see the Grand Canyon," said Dr. Ross, "than on the back of a mule".

While horses may rank among Dr. Ross' favorite animals, she is a lover of all animals. She and her husband currently have three cats, but in the past their menagerie of animals has included a horse (of course), rats, a hedgehog, and a snake.

They are looking forward to growing their household again in the future and Dr. Ross says a horse will be among the first to join them.

In her spare time, Dr. Ross enjoys hiking, exploring new outdoor activities, and anything music related.

She says that there is always music playing her office, and if you're wandering the halls of Bartlett Hall one day and hear music, you can always hear office by just following the sound.

At the next Center or 4-H event you attend, keep your eyes open for Dr. Ross and be sure to introduce yourself!

The staff at the Center has been excited to welcome her to our team, and we hope that you extend an equally warm welcome to her.



THE EQUINE SCIENCE CENTER PRESENTS THE



# 2023 New Jersey Equine Summit

Thursday, March 16th, 2023  
10:00am to 5:00pm

**Keynote By Dr. Jill Stowe  
From The University Of Kentucky**

**"Economic Analysis Of Equine Operations:  
Tips For Reducing Costs For Horse & Horse Farm Owners"**

## *Program Highlights:*

Panel Discussion on the State of the U.S. Racing Industry With:  
Jim Gagliano - President of the Jockey Club  
Mike Tanner - Executive Director of the U.S. Trotting Association

Lunch

Breakout Sessions:  
The Future of Racing, Equine Health & Well-Being,  
Land Use & Policy Management, Integrity of Equestrian Sport,  
Economic Growth & Industry Sustainability, and Environmental Stewardship

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**RUTGERS**

New Jersey Agricultural  
Experiment Station

Event is completely free and open to the public.  
Save the Date! More details to follow.  
Hosted at the Cook Student Center  
59 Biel Road - New Brunswick, NJ 08901



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