

Equine Research Team

Hoofbeats

The Official Newsletter of the Penn State Equine Research Team

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Another Successful Year for PSERT

Continue to follow PSERT's projects, events, and activities online!

PSERT Website:
<http://agsci.psu.edu/clubs/psert>

Facebook:
The Penn State Equine Research Team

Welcome to the spring 2016 issue of *Hoofbeats*! As this year comes to a close and graduation approaches, there is much to be said about PSERT's achievements. We have had an accomplished year, including a new spring graduate study and some undergraduate research presenta-

tions. In this issue, I will highlight the team's Gastrointestinal Health Study as well as our individual

undergraduate research projects. The end of another year has prompted a "Where Are They Going?" article, which will list some of the accomplishments of our graduating seniors. I will also present the new PSERT executive board for 2016-2017. Thank you for your interest in PSERT's endeavors—I hope you enjoy this issue of *Hoofbeats*!



Members of the Penn State Equine Research Team and our advisor, Dr. Staniar.

-Maura Carr, Historian and Alumni Relations Officer

Gamma Sigma Delta's 2016 Research Exposition

This semester, three of our undergraduate members presented their current research at Gamma Sigma Delta's 2016 Research Poster Exposition:

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Jenny Lind is researching the differences in development between colts and fillies in the early stages after birth. She recently discovered that colts take significantly longer to stand up and nurse than fillies. After inputting data from the past 10-15 years regarding the Penn State mares and their foals, she is now working on a short communication for submission to the *Journal of Equine Veterinary Science*.

Kris Murray is studying gender trends within agricultural majors at Penn State. He spent some time in the library collecting male and female graduation numbers in the agricultural majors from 1960-2014. He has recently found that the number of female graduates increase while the number of male graduates decline over the years. Kris won 2nd place in the Human-related Sciences division.

Maura Carr is researching the trends in milk pH and calcium levels during late gestation to better predict equine parturition. Using this data, she is working to develop a system to better estimate the likelihood of foaling within 24, 48 or 72 hours. She has recently found that the pH of preparturient mammary secretions is the best indicator of parturition within 24 hours. Maura won 3rd place in the Animal-related Sciences division.

Spring 2016 Graduate Study

The research study this year is titled “**Oats Improve Gastrointestinal Health**”. The aim of the study is to investigate whether the inclusion of whole oats at varying concentrations in the horse’s diet will influence a group of response variables associated with the horse’s gastrointestinal health. **Patricia Ochonski** and **Siga Lapinskas**, two graduate students in Dr. Staniar’s lab, head the project. Patricia is focusing on changes in markers of inflammation in response to ulceration and permeability, while Siga is focusing on changes in gastrointestinal permeability and ulceration. The twenty-week long study includes blood samples being taken three times every two week period, as well as gastroscopies and 24-hour urine collections to measure sugar absorption, all of which are opportunities for undergraduate students on the research team to get involved. Additionally, students are able to help Patricia and Siga with barn chores and horse feedings twice daily.



One of the study’s horses wearing a urine collection device.



PSERT member, Yvette, processing urine during a 24-hour collection.



Siga and Patricia happily collecting urine from one of the geldings!

Two undergraduate PSERT students are conducting their own projects as a part of the Gastrointestinal Health study:

Molly Rogus is examining and analyzing the health of the horses throughout the study. Her theory is that certain diets, namely the pellet and hay diet, will induce the most or worst ulcers in the horses' stomachs. Ulcers are associated with pain, discomfort, and an inflammation response, which should appear during a physical exam. Therefore, Molly does a general pain score and demeanor assessment of the horses to see if they look like they are experiencing any discomfort. She also takes their heart rates and temperatures; an increase in these vitals is an indication of an inflammatory response occurring in the body. If Molly is able to show that the horses’ health was visibly altered based on their diets, it could certainly help strengthen the study’s conclusions.

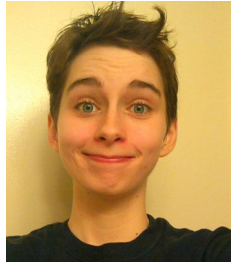
Krystle Swartz is taking fecal samples from each horse, once per treatment period within the oat study. The fecal samples are being tested for pH and dry matter, and will be processed using a wet sieving technique after all 4 treatment periods are complete. The wet sieving technique will quantify fecal particle size, which indicates digestibility of the different diets. In order to compare fecal particle size, she is also quantifying feed particle size. In addition to fecal analysis, Krystle is measuring the number of chews per 1 kilogram of feed for all horses once during each treatment period. The intention of publication for this data is expected to take place during the next academic year, and will hopefully support the hypothesis of this study.

PSERT has had many successful alumni that have a variety of jobs in the fields of equine production, management, food service and distribution, veterinary medicine, and many others. In this article, the accomplishments and opinions of three distinguished PSERT members will be highlighted, as well as the role PSERT played in directing their future. Thank you to Kris Murray, Megan Powers and Sara Groome for your time and consideration in helping to make this article a success!

Kris Murray

Current career path:

I will soon be moving to Scotland for the University of Glasgow's Veterinary Program in the fall. I plan to become a veterinarian, focusing either in research or small animal/equine health.



my freshman year. I was Webmaster my sophomore year and President this past year. I really enjoyed working with the people and horses and feel like I have gained a lot from this club.

choices by showing me how much I love horses and helped me find and develop my passion for research. I believe that by participating in this club, I have gained a lot of experiences that will help me later on in life and in veterinary school.

Role in PSERT:

I have been involved with PSERT since

How did PSERT influence your undergraduate career and career choice?

PSERT has influenced my career

Advice for PSERT members?

My advice for other PSERT members would be to participate in as many activities you can! These hands-on experiences really give you a chance to learn things that other students might not be able to.

Megan Powers

Current career path:

I'm headed to veterinary school at Ohio State University this August to pursue a career as an equine veterinarian. I'm incredibly excited for this opportunity, but will forever miss Penn State and am grateful for everything this school taught me in and out of the classroom.



raising/Volunteer co-chair for the 2015-2016 year. I participated in the Open House at Penn State's horse barn and took heart/respiration rates at the 4H trail ride this fall. This semester, I am participating in the Oats and GI Health study, where I watched a gastroscopy and helped with 24-hour urine collections.

in my vet school interview with OSU, so it was great to have examples from PSERT to use.

Role in PSERT:

Since I started at a Penn State branch campus, I was only involved in PSERT for 2 years. In 2015, I helped with data collection for the "More Labor, More Love" study, and was elected as Fund-

How did PSERT influence your undergraduate career and career choice?

PSERT was a great way to get research and leadership experience with something I really liked doing (working with horses and not inside a lab). Research and leadership were both things I was asked about

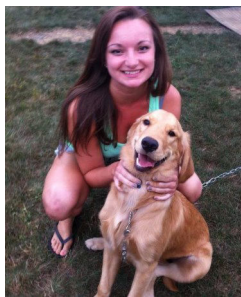
Advice for PSERT members?

Get involved as much as you can to take advantage of the hands-on research experience PSERT offers, and run for an officer position to get leadership experience. The research we do is very relevant to current problems in the equine industry, and since many of you may be looking for equine related jobs, it is relevant to you as well. We have a ton of fun as a club, so come to the meetings and events to meet new friends that are interested in horses just like you!

Sara Groome

2015 Penn State Graduate

"I joined PSERT my sophomore year and was involved in Katie Norris' study, where I helped collect urine and blood samples at the horse barn. I was elected as the club's Social Chair for both my junior and senior years. During my junior year, I also helped out with Sheila's growth study on the twin foals. I attended our team trip to Kentucky my junior year,



which was a blast and helped me get to know the officers of PSERT a little better. I learned a great deal about equine nutrition and reproduction through my involvement in PSERT.

I worked as a pharmacy tech at CVS, and am currently attending Temple University's School of Pharmacy. I will hopefully have my Pharm D. within 4 years, which will allow me to become a licensed pharmacist. I'm not 100% sure what direction I would like to go in as a

pharmacist, but I would either like to work as a pharmacist in a hospital, or work for a large pharmaceutical company (such as Novartis, GSK, Pfizer, etc). Pfizer has a branch of animal health and I potentially may dabble in veterinary pharmacy, so my time as an animal science major and member of PSERT has definitely prepared me for a career in such a field."

A Word from Dr. Staniar

“The 2015-2016 academic year has been a very productive one for PSERT! This team of undergraduate students interested in equine research continue to be a source of energy and ideas for me as an equine scientist at Penn State. I often think back to the beginnings of PSERT, to Jess Bussard, Jennifer Morrissey, Natasha Repard, Hilary Grube, and many others! They wanted to learn more about the horse through hands-on research. What they started has paid dividends over and over again with each group of students that become members of PSERT. Today I look at some of our graduating members like Megan Powers, Hannah Allen, Kris Murray, and Taylor Shears and I am thankful for the dedication and effort that students continue to put into the team. The team is only successful if its members are willing to work hard together to accomplish the goals they set forth!



Dr. W. Burton Staniar
PSERT Advisor

A great indicator of our recent success is that we will be presenting 5 new research posters at the Penn State Quarter Horse Sale on April 30th. These represent work done by many members of the team, but the lead authors are Ashley Sutton, Danae Oliver, Maura Carr, Kris Murray, and Jenny Lind. They’ve done a lot of hard work in the barn and in front of the computer to complete these projects! Topics range from nutrition’s influence on immunoglobulins in foals to whether colts or fillies stand and suckle faster. The opportunity that I have to work with these students is truly one of the best parts of my job. Thank you to all the present and past members of PSERT. I look forward to many more years of new and unique research projects aimed at improving the health and performance of the horse.”

PSERT Elects 2016-2017 Executive Board

As PSERT looks toward another great year, a new set of executive board members was elected during the April 19th meeting. Good luck to all the new officers!

President - Krystle Swartz

Vice President - Maura Carr

Secretary - Yvette Gramignano

Treasurer - Molly Rogus

Public Relations Chair - Jenny Lind

Social Chair - Sara Cook

Community Service/Fundraising -
Tiffany Anderson and Yasmin Vasquez

Thank you for reading the most recent issue of *Hoofbeats!* It has been great to serve as PSERT’s Historian and Alumni Relations Chair, but it is now time for our new Public Relations chair, Jenny Lind, to take over for the 2016-2017 academic year.

See below for some fun pictures that PSERT has taken at their past events. Have a great summer everyone!

-Maura Carr

If you know anyone who would like to be added to the PSERT alumni list or would like to receive the newsletter and PSERT updates, please contact Jenny Lind at jil5694@psu.edu



Some of our hand-made Cowgirl Cookie jars sold for fundraising!



Members of PSERT with one of the horses at the barn for the annual Open House.



One of the geldings involved in the Gastrointestinal Health project.