
The British Equestrian Federation and Virginia Tech Internship at Middleburg Agricultural Research and Extension Centre 2017

By Rhiannon Elsmore



Morning view of the thoroughbred geldings whilst on feed run

The British Equestrian Federation in conjunction with Virginia Polytechnic Institute and State University (Virginia Tech) have run an annual internship for an individual to spend the summer at Middleburg Agricultural Research and Extension Centre (MAREC). It is situated in a remote area near the picturesque town of Middleburg, in the heart of hunt-country surrounded in stunning scenery.

I found out about the internship through Reaseheath College and knew it would be an amazing way to spend the summer. To apply I submitted my assignment from my veterinary physiology module on the Diagnostic Techniques of Exercised Induced Pulmonary Haemorrhages in Equines. Shortly after I received an email from Dr Georgina Crossman (BEF Research Consultant) saying I was selected for the interview phase at BEF headquarters at Abbey Park, Warwickshire. All interviewees went down for the day together with the previous year's winners Michelle Hand and Zoe Greenwood, former Reaseheath graduates, and we were all met with friendly faces and interviewed by Dr Georgina Crossman, Professor Graham Suggett and Dr Bridgett McIntosh (Extension Equine Specialist from the MARE Centre) on Skype.



Interviewed candidates including last year's winners Michelle Hand and Zoe Greenwood and this year's winners Rhiannon Elsmore and Connie Dale

This year two candidates were chosen for the 2017 internship, both myself and Connie Dale. We were both thrilled by the exciting

opportunity approaching in the summer and quickly added each other on Facebook! Having someone else with me to help plan the flights and the study visa was really useful as I had never travelled by myself before and it was a little daunting. We met at Manchester Airport for only the second time and set off on our journey together. All the graduate students were really welcoming and we got on really well with Marangely Santiago, Abby Nelsen and Carolee Williams the American interns. I am already planning a summer holiday next year to go and visit Marangely in Puerto Rico!



Connie and myself at the 4th of July weekend fire work show at Great Meadows

Middleburg is a small town in Loudoun County, Virginia and has plenty to offer. Only a 10-minute walk from the MARE Centre, it is an ideal location to visit for meals out at the Red Lion, coffee at the Cuppa Gidey Up or even ice cream at the famous Scruffy's Ice Cream Parlour. This town also has many attractions including the National Sporting Library and Museum, wineries and cideries.



Left: Baby R (Royal Appearance X Balencia VT)

Right: Baby D (Don Hill X Persimmon)

Our days were jam packed with duties including feeding and caring for the 42 horses on the property. These included three foals and the stallion Innkeeper (Secretariat x Sue Babe). I had the opportunity to shadow Dr Katie Fitzgerald, the MARE Centre's veterinarian. She was mainly performing reproductive related procedures on four mares. These included ultrasound scans to check for oestrus and insemination using frozen semen. This was an amazing experience even though the insemination took place at 6am! Along with seeing veterinary care to Baby R a foal with an eye ulcer at the MARE Centre, we also got to see the work of both the farrier and the osteopath. We were also privileged to take part in a hoof and leg dissection which was really fascinating. We learnt how different conformation and skilled farrier work can influence how the hoof grows to try and prevent diseases such as navicular.



Baby R (Royal Appearance X Balencia VT) taking a nap



Morning view from our house

An ongoing project for all interns is creating an ID book for all the horses to help with the sale of the two-year olds and weanlings in October. Connie played a very big role in writing up information into the sale profiles and I took all of the pictures as I have a keen interest in photography and I brought my camera with me.



Rollison (Renzi X Glossy Ibis)

During our stay, several tours and lectures were planned and we were encouraged to help set up and be a part of these. One of the speakers was from Buckeye, the feed company which sponsors the MARE Centre. Buckeye is a division of Mars Inc which also owns Spillers in the UK. The speaker was highly informative about what goes into making nutritional feed and supplements and gave us useful advice on careers in the feed industry.



Visiting the Virginian Senator, Mark Warner (right)

Symposium, a day of public lectures and demonstrations, allowed us to learn lots and listen to guest speakers about water management, tips on buying a horse farm and field design. After Symposium, we went to Boxwood Winery situated just across the road for a wine tasting then went to the library/ town hall for a country concert.

On the 20th July, we had a trip to Washington DC to visit a number of people from the headquarters of the American Horse Council, Animal Agriculture Alliance and the Virginian Senator, Mark Warner. It was a highly interesting day, talking about careers in politics, current legislation and welfare issues including the Tennessee walking horses and slaughter.

I was very lucky to be a part of three PhD student studies. These included Katie Kaufman's study looking at blood glucose levels in 12 warmblood mares over a year by collecting blood, faeces and pasture samples and collecting weight and body condition scores every week.

This sampling allowed her to measure glucose, insulin, lactate, faecal pH and DNA of bacteria and to see if over the year there are changes in the gut flora. My role included fly spraying the mares before blood was drawn, feeling for digital pulses, measuring hoof temperature and assisting Katie when she took faecal samples whilst the horses were in stocks. We also



MSc student Katie Delano drawing blood



Sampling Aubrey's turf plots

assisted in her lab work by centrifuging blood samples so the plasma separated and pipetted them into vials. This was a new experience for me as I have not spent much time in the lab using the equipment or seeing and assisting in blood draws.

In another study, Aubrey Jaqueth from Maryland University is looking at the preference for different types of grass using four mares to test for palatability, stability underfoot and sugar content. Her aim is to find a low sugar content grass which may be used for overweight horses and ponies.

Over two years she has looked at nine different grasses in nine separate plots within four grazing areas. This has resulted in 36 sampling areas requiring three random clippings taken once a month before the horses go on for eight hours and again after. I helped by sampling the grass, clearing out the manure, drying the samples in an oven and then weighing them.

This was an extremely interesting study as a number of horses in Virginia are obese due to the rich luscious grass, which isn't as common in the UK. Her study is going to be highly beneficial to the equine industry as many horses suffer from laminitis related issues, and these low sugar grasses allow the horse to eat just as much but not receive the extra sugars. This could be ideal for the native ponies in the UK which do well on 'thin air', more research needs to be looked at in the UK for low sugar, high moisture and palatable sward types.



Khuzy in the Best Management Practice Pasture

Finally, Kristine Ely's study was accepted in late August and quickly got under way. Her study was looking at the digestibility of pelleted and extruded feed as well as a control group on hay. Nine thoroughbreds were situated on a dry lot over the three months of the study. Each group of three were kept on the feed source for a month before wearing diapers for four days to allow for sterile faecal collections. We were heavily involved in this study as we had to clear the dry lot, top up hay, water, clear out stalls and feed morning and evening which certainly kept us busy.



Momo being a calm recipient of the diapers for Kristine's study

On the day of the first blood collection, we were able to see catheters being inserted, and sutured onto the horse's neck. Throughout the day bloods were drawn every 15 minutes for four hours starting at 7.30am and again at 4pm. We were in charge of transporting the blood back to the lab, centrifuging and then pipetting into the correct vials. It was an extremely busy day for myself and Connie, but it was a fantastic experience for us both as we were an extremely important factor to Kristine's study.



Lab work is under way



Collecting faecal samples from 13 race horses at Larry Curtis' yard

During my time here, I was able to collect data for my dissertation on the effect of management practices on intestinal parasites in horses in the US vs. UK. This was an amazing experience allowing me to collect faecal samples at local race yards, event yards and from all of the MAREC horses and be able to do all the lab work independently.

I collected over 70 faecal samples and did a questionnaire for the owners including a pasture management section and anthelmintic treatment questions.

Connie was really helpful in helping with my data collection and thanks go to the American interns for driving us to where we needed to go. Dr Bridgett McIntosh allowed me to have free time so I could research into the topic area, travel to different yards and let me use the lab and equipment for the faecal egg counts.

On our last weekend, we went with Sandy Arnold (VA State Youth Equine Extension Program Associate) to the Virginia State 4-H horse and pony show at Lexington. We were involved in judging the stable management section for competitors. I really enjoyed myself as I could interact and speak with the competitors and their grooms about their different classes and they had a lot of questions for me as I had a funny accent! As well as the judging, we were able to see hunter jumper classes, gaited classes and western pleasure. This was a new experience for both of us as we had never judged or seen a western show.

A few weeks before, we also went with a 4-H group to tour the Equine Medical Centre which allowed us to see the theatres and how they sedated the horse and how it was then moved on to the operating table. At Equine Reproductive Concepts, we witnessed how artificial insemination works and we saw a live collection from a Cleveland bay stallion using an artificial vagina and a dummy mare.



At the Shenandoah National Park on my birthday



At the White House, DC



Connie and myself on a trail ride

During our free time, we were able to go to Great Meadow Polo and 4th July Weekend, plus BBQs at Dr Bridgett McIntosh's house. On my birthday weekend, we all hiked in the beautiful Shenandoah National Park and travelled to DC to see the sights and the Natural History Museum which I could have stayed in all day. It was a fabulous new experience and I would recommend to anyone who comes here.

During Stable Tour (before Connie and I arrived), a lovely old couple took an interest in the American interns and quickly became known as our grandparents! They took us on trips out to the National Space Museum, lunches and took Connie and I to see baby goats! They were a really interesting couple with lots of stories to tell and I'm sure they will come back next year to talk to the interns of 2018.



Connie and myself taking in the views

Most weekends, both me and Connie were able to go to Nichole Villars Amatt's event and livery yard. Nichole allowed us to school, jump and trail ride her top horses in return for help with chores a few times per week. This was kindly available for us due to the fact that MSc student Katie Delano, who lived below us, kept her horse loupe there.

On our drive back from the 4-H show, Connie, Katie Delano and myself drove down 105mile Skyline drive right through the middle of Shenandoah National Park. The views were breath taking and definitely one of my favourite moments on the internship. To top off the beautiful scenery, we saw a bear sitting on a stone wall just looking at us. However, we were not fast enough to take a picture!

At the MARE centre the wildlife was abundant, with constant insect chirps and lots of brightly coloured birds, the occasional eagle and vultures! The centre offered a wildlife friendly habitat for all types of wildlife and the deer happily grazed the gardens and woodland areas surrounding the farm, making easy photography moments. Foxes, ground hogs and chipmunks also have a home at the centre and I often saw them on the morning feed run.

Being immersed in the American culture was such an interesting experience and we learnt a lot from each other. Both Connie and myself found our American persona when we bought our own cowboy boots, had our first Walmart experience and tried our first American burger at a diner.



Regular visitor to the MARE Centre

The three amazing months at the MARE centre, was an incredible experience which expanded my knowledge, boosted my confidence and I also made some really good friends. I learnt so much and loved being in the middle of new and exciting research that will benefit the equine industry. I feel the internship has made me realise I would like to further my education and I have begun to look at possible options for a Master's Degree post graduating next year.



Shenandoah National Park

This was a rare and fantastic experience; one that will undoubtedly improve my ability to compete with other candidates for jobs and further study. I'm so thankful that I had this opportunity, and to do so alongside such wonderful people, in such a beautiful part of the world. I would like to thank the British Equestrian Federation, Virginia Polytechnic Institute and Virginia Tech for running the internship this year and to Dr Bridgett McIntosh for aiding me in my data collection and allowing us to be a part of the research. It was truly an amazing summer and one that I will never forget.



Baby R and Baby Q letting off some steam!