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New technology enables the successful non-invasive evaluation of embryo DNA from culture media

Dr Lee Morris

Early pregnancy loss is a major challenge in horse breeding. A significant proportion of these embryos may fail to develop because they carry the wrong number of chromosomes. At present, we judge embryo health mainly by looking at the embryo's appearance under a microscope, but this method cannot detect genetic problems. Our objective was to investigate whether tiny fragments of DNA released by embryos into the fluid they grow in can offer a simple, non invasive way to learn more about the embryo's chromosomes. As a first step toward this goal, this study used an in-vitro embryo culture model to test whether these DNA fragments could be used to determine the sex of the embryo.

We collected used culture media – the liquid in which embryos had been growing – from 60 equine embryos produced using intracytoplasmic sperm injection (ICSI). We then used laboratory DNA detection methods to look for genetic markers found on the X and Y chromosomes. If the Y chromosome marker was present, the embryo was male; if not, it was female. Embryos were also graded visually at the end of the culture period using an established scoring system.

For 33 embryos, we were able to confirm the embryo's sex through independent methods, such as by taking a small biopsy or checking the sex of the foal after birth. In these cases, the sex determined from the culture media matched the confirmed sex every time.

We also measured tiny particles floating in the culture media, small structures that cells naturally release. We compared particle levels in used media, unused media, and control samples. Although used media contained more particles than unused media, the levels were similar to control samples, suggesting that many particles came from the environment rather than the embryo itself. Particle size also varied slightly between groups, but these differences did not seem relate to embryo quality, although further exploration is needed.

This collaborative study between EquiBreed ART and the University of Auckland, funded by the NZERF, further contributes to our understanding of embryo development and pregnancy loss. Overall, our study showed that DNA released by embryos into their culture media can be successfully detected and accurately reflects the embryo's genetic sex. This finding supports the future development of non invasive genetic testing methods for horse embryos, which could help breeders identify healthy embryos without performing biopsies. It may also be possible to use this model to study how the embryo's environment contributes to embryo quality and early pregnancy loss. More work will be needed to evaluate how the extracellular vesicle particles can be used to assess embryo health.

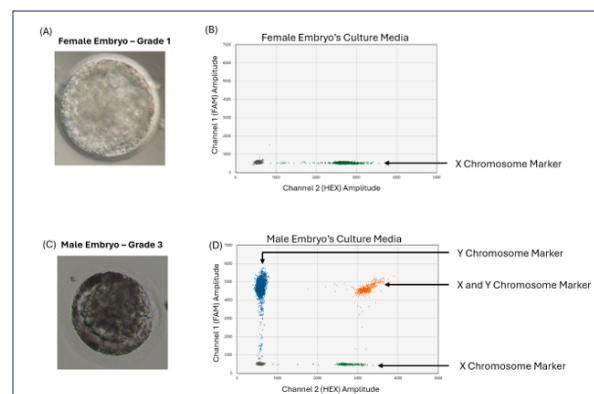


Figure 1. Output from PCR assay of culture media



Figure 2. Healthy foal produced from an ICSI embryo

Standing lag-screw fixation of a lateral condylar fracture of the third metacarpal bone in a Thoroughbred racehorse

Lauren Keen, 2024 NZERF Massey Veterinary Student Scholarship recipient

HISTORY

A four-year-old Thoroughbred gelding was presented for evaluation of an acute-onset lameness of the right forelimb after a training gallop on the track.

CLINICAL FINDINGS

On physical examination the gelding was minimally weight bearing on the right forelimb, with swelling of the right fore fetlock. He showed marked resentment to flexion of the right fore fetlock joint. There were no other abnormalities on physical examination.

DIAGNOSTICS

The gelding was sedated and standard radiographic views were taken of the distal right forelimb. The radiographs revealed an incomplete, non-displaced, long oblique fracture of the lateral condyle of the third metacarpal (cannon) bone, approximately 10cm in length. It was recommended that the horse be transported to the veterinary hospital for surgical fixation of this fracture to give the best chance of achieving a good athletic outcome.

TREATMENT

Surgical fixation was completed under standing sedation, using a constant-rate infusion of detomidine to keep the gelding immobilised but still standing to facilitate the procedure. Two 4.5mm cortical screws were placed through separate skin incisions in lag fashion through the cannon bone to reduce the fracture line. Radiographs were taken continuously throughout surgery to assess the fracture reduction and ensure the correct placement of the screws. The incisions were closed with non-absorbable suture material and a light bandage was placed to protect the surgical site and provide compression and support to the limb.

OUTCOME

Eight weeks after surgery, repeat radiographs were taken of the right forelimb fetlock region. These showed good fracture healing with a smooth bone callous and no signs of arthritic change in the fetlock joint. There was no evidence of bony lysis/destruction that would be associated with an infection around the screws. The horse was cleared to start gentle exercise as part of the recovery.

DISCUSSION

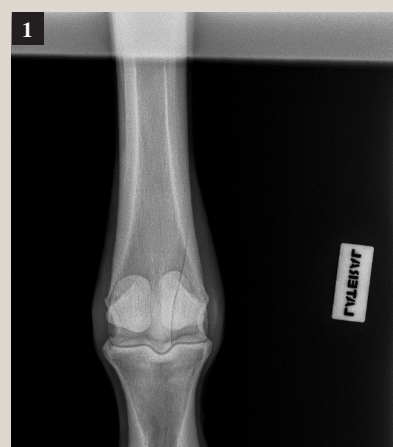
Fractures of the distal condyles of the cannon bone are the most common long bone fracture in Thoroughbred racehorses. These fractures are described as stress fractures as they arise from chronic, repeated stress to the bone rather than a single acute trauma. Bone has a mechanism by which it remodels and adapts to the forces it is placed under. For racehorses, the forces of racing and training result in a change in the density of the bone at this point, and tiny microfractures can form. Continued force can cause these microfractures to coalesce and propagate further up the limb, as seen in the case of this gelding.

There are several factors that have been associated with an increased risk for the development of these fractures in Thoroughbred racehorses. Horses in their first year of racing experiencing a sudden increase in the forces put on their bones, are more likely to suffer these fractures due to maladaptive bone remodelling. This same mechanism also applies to horses that have a sudden increase in training intensity. The age of the horse when it first races has also been shown to have an impact on the risk. Horses that race for the first time as 4-year-olds are more likely to suffer these fractures when compared to their 2-year-old counterparts. This has been hypothesised to be due to their stage of development and how the growing skeleton is able to respond to an increase in forces. For horses that start racing younger, their bones are in an earlier stage of development and may be able to remodel and adapt more appropriately to the increased forces. Several of these factors were contributing to the fracture in this gelding, as he was a 4-year-old in his first year of racing.

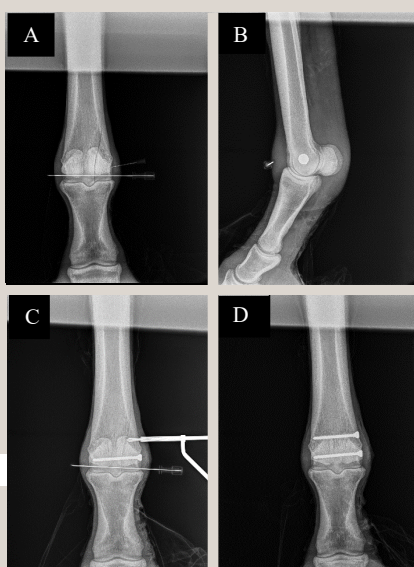
The prognosis for cases of non-displaced condylar fractures is favourable, with 70-80% of horses returning to full athletic function.

ACKNOWLEDGEMENTS

I would like to thank the team at Cambridge Equine Hospital, especially Dr Tatjana Wagner for allowing my involvement in this case. I would also like to thank Dr Luca Panizza and Dr Christopher Beggan for improving my understanding of lateral condylar fractures and supporting me in writing this report.



▲ **Figure 1:** Standing dorso-palmar projection. An incomplete, non-displaced, long oblique fracture of the lateral condyle of metacarpal III can be visualised.



◀ **Figure 2:** Intraoperative radiographs. **A:** Radiopaque marker placement to guide insertion of lag screws. **B:** Latero-medial projection with distal screw centred in the lateral condyle of MC III. **C:** Proximal cortical screw placement. **D:** Post-surgery dorso-palmar projection with adequate fracture reduction achieved.



◀ **Figure 3:** Standing dorso-palmar projection of the right forelimb 8 weeks after lag screw fixation showing good fracture healing with a smooth periosteal reaction at the fracture site and no evidence of arthritic change in the fetlock joint or lysis around the cortical screws.

2026 Massey Veterinary Student Scholarship recipients

Summer Didsbury and Ella Rae-Wood



Summer Didsbury has had a passion for horses from a young age, with particular interest in natural horsemanship and stockmanship. She grew up with horses on a farm, riding for both work and pleasure, as well as riding with the Wairarapa Hunt Club and working at Erehon Station, a Clydesdale stud in the South Island. Although New Zealand's agriculture industry was close to her heart, a placement at Matamata Veterinary Services Equine Hospital in 2024 really sparked Summer's interest in equine veterinary work. She will use this scholarship

to gain more practical equine experience during her final year of veterinary school, which will have a big impact on her future career.



Ella Rae-Wood also has a strong equine background, having grown up competing in showjumping, and more recently working in the Thoroughbred racing industry. She has spent several summers working at Riccarton Park and currently works part-time at Awapuni Racecourse while studying at Massey. Her lifelong involvement with performance horses has inspired her to pursue a career in veterinary medicine, with a particular interest in equine sports medicine and reproduction. Ella has completed placements at Canterbury Equine Clinic and Rangiora Equine Services, and this

scholarship will help her gain further practical experience during her final year of veterinary school as she prepares for her career as an equine veterinarian.

Travel Report – Liam James

2025 Special Salient Trust Scholarship recipient

First and foremost, I would like to thank Jenny Kain for her generous sponsorship of the Salient Trust Special Scholarship, which allowed me to travel to South Africa to take the American Farriers Association Certified Journeyman farrier examination. It also allowed me to spend time with my mentor, Robbie Miller, and the team members of his multi-faceted practice in Cape Town.

The examinations weren't as easy as I had hoped; I scored highly for the forging and theory aspects of the exam but the shoeing portion proved harder than I expected. While the task of shoeing a horse with plain stamped shoes on all 4 feet is quite straightforward, the horse that I drew to shoe had less than ideal conformation, which made it tricky and I ended up falling short by 4 or 5 mm.

I was rather disheartened by my efforts initially, but after sleeping on it I realised that if I want to pursue these higher-level certifications, even on my worst day, producing my worst work, I should still be achieving a passing score! I don't want to just scrape through, I want to pass convincingly, knowing that I could do so on any day, with any horse. Because I passed the theory and forging aspects I only need to re-sit the shoeing portion of the exam and I have already signed up for this in Maryland in May 2026. Both of the American examiners have very generously offered to host me for my next attempt, so I jumped at the opportunity and will spend a week with Mike Poe when I head over to the USA this May.

For the rest of the trip, I was able to spend each day as part of Robbie Miller's farrier practice which consists of five qualified farriers, including Robbie, and five helpers. Most of the work involves racehorses and stud work with a few sport horses thrown in the mix. It was extremely rewarding to see how efficiently such a large practice runs and to see how they manage such an intensive workload.

The one thing that stood out to me from the trip was that it always comes back to the same thing: when keeping horses sound and performing at their best it's all about executing the basics properly, and the key to understanding the basics and how to apply them is education. No matter the horse's breed, job, height, colour, or location, the basics will always be the same! When you put yourself forward to be judged/assessed by your peers, it pushes you to focus on the basics.

I encourage any farrier, whether they have been shoeing for two years or 20 years, to step out of their comfort zone and enter competitions, attend clinics, and pursue different certifications, because regardless of whether you win, lose, pass, or fail, you will be a better farrier for it!



Liam James (left) with Mike Poe (right)



Working the Forge

Ovarian Granulosa Cell Tumour in a Warmblood Mare

Grace Bleach, 2025 NZERF Massey Veterinary Student Scholarship recipient

HISTORY AND INITIAL CLINICAL FINDINGS

A 6-year-old Warmblood mare presented as a donor mare for embryo transfer. This involves artificially inseminating the mare, flushing the resulting embryo out at 7 days of pregnancy and implanting it into a recipient mare. This visit was the initial reproductive examination to prepare the mare for breeding.

On the initial ultrasound exam the left ovary measured approximately 3.5 x 2.4cm, which is markedly smaller than a normal ovary for a horse this size. The right ovary was too big to fit into one view on the ultrasound machine. It was estimated to measure 12x15cm in size and had a honeycomb appearance on ultrasound. The main differential for an enlarged ovary that has a cystic appearance is an ovarian granulosa cell tumour.

Ovarian granulosa cell tumours (GCTs) are benign tumours of the granulosa cells within the ovaries. Whilst they rarely metastasise, they are hormonally active and secrete high concentrations of hormones such as inhibin, oestrogen and testosterone. This leads to infertility of the mare as the high concentrations of inhibin cause the contralateral ovary to atrophy (decrease in size) and stop cycling. Higher concentrations of testosterone can lead to the mare developing stallion-like behaviours which is a common presenting sign in a mare with a GCT.

When a GCT is suspected on ultrasound it can be confirmed by a blood test for anti-Müllerian hormone (AMH) in the serum. AMH markedly increases when a GCT is present. For this mare the AMH result was 164.00 pmol/L (normal range is < 21pmol/L), confirming the diagnosis of a GCT. The only treatment for GCT is surgical removal so the mare was booked in for a laparoscopic ovariectomy of the right ovary the following week.

TREATMENT

The mare was hospitalised for 36 hours prior to surgery and fasted. This allows the gastro-intestinal tract to empty out, which improves visualisation during surgery. Prior to surgery the mare received intravenous flunixin for pain relief and gentamicin for antibiotic coverage. Procaine penicillin was also administered IM to broaden the antibiotic coverage.

A laparoscopic ovariectomy was used to remove the entire right ovary. This was performed under standing sedation using a constant rate infusion of detomidine. Both flanks were clipped and surgically scrubbed. Mepivacaine (local anaesthetic) was injected subcutaneously where the laparoscopic portals were to be placed. The laparoscope was inserted into the abdomen through the left flank and the abdomen was inflated with carbon dioxide. The GCT was visualised and the surgeons moved on to the right side.

Three laparoscopic portals were created in the right flank. The laparoscope (camera), probe and the LigaSure device was inserted into each of these portals. The ovarian pedicle was anaesthetised using mepivacaine. The LigaSure vessel sealing device was then used to simultaneously clamp, cauterise and cut the ovarian pedicle to free the ovary from the body wall. Once the ovary was detached, two of the portals were joined together creating an incision large enough for the vet to reach in and manually remove the ovary from the abdomen. Once the ovary was successfully removed, the muscles in the incision were closed in three layers, followed by skin staples to close the skin.

The removed ovary measured 18x15cm. When incised it had a cystic structure. The ovary was not sent off for further testing as the vets were confident that it was a GCT. While there are a few other tumours that can affect the ovaries in mares, granulosa cell tumours are by far the most commonly reported ovarian masses.

Post-surgery the mare received phenylbutazone for pain relief and trimethoprim sulfadimidine for antibiotic coverage for 3 days while she remained in hospital. Food was gradually reintroduced over the 3 days to allow for her gastrointestinal tract to adjust. Each day she received 2 checks, morning and night, to assess her temperature, heart rate, respiratory rate, pain score, wound healing, gastrointestinal motility, appetite and demeanour.

The prognosis for this mare and her fertility is good. Once the granulosa cell tumour has been removed, serum inhibin concentrations will decrease, and the left ovary should start cycling again and produce normal follicles.



Figure 1: Right ovary measuring at least 11.2cm on ultrasound



Figure 2: Incision into the removed ovary showing the classic cystic appearance of a GCT

DISCUSSION

Unilateral ovariectomy has been shown to significantly improve clinical signs in mares with GCT. In one case series study, all of the performance horses returned to athletic activity and 93% of the mares intended for breeding were successfully bred in the first season following their surgery. Following removal of the GCT, inhibin levels drop significantly as fast as one day post-surgery in young mares. These mares also had a rapid compensatory ovarian hypertrophy response in the contralateral ovary. This response has not been shown to be the same in older mares, and it is currently thought that this is because inhibin may be secreted by other tissues in older mares so removal of the GCT does not eliminate all sources of inhibin secretion. The mare in this case was only six years old so it is expected that her left ovary will undergo rapid compensatory hypertrophy and begin cycling again when the days get longer.

Travel Report – Dr Julie Bell

2025 Jonathan Hope Scholarship recipient

I am very grateful to be awarded one of the 2025 Jonathan Hope Scholarships and used the fund to travel to North America in July 2025 and spend time in two busy performance horse clinics.

I started my trip at McKee Pownall Equine Services in Campbellville, Ontario, where I spent the majority of my time with Dr Melissa McKee. Melissa is well respected for her evaluation of lameness and poor performance in Standardbred racehorses and sport horses. The days were very busy, and Melissa's team ran like a well-oiled machine. I found it extremely valuable to observe cases similar to what we see at home and have the opportunity to discuss the work-up and treatment options. Although some of the treatment options used were different to what we currently have access to in NZ it was still interesting to discuss the thought process behind different treatments used. I also had the chance to be involved with a standing MRI while at the clinic. There is no doubt that this diagnostic modality has its own challenges but the benefits of having more advanced diagnostic technology available is something that we can hopefully look forward to in NZ one day. On the final evening of my stay Melissa and her partner Dr Mike Pownall arranged for us to have dinner at Mohawk Raceway. It was a lovely evening where we got a chance to

discuss not only the horses we had seen during the week but also some of the benefits and challenges involved with running a veterinary business. I really enjoyed these discussions and took plenty of learnings away from the evening.

I spent the last week of my trip in Ocala, Florida, at B.W Furlong and Associates. Most of my time was spent with Dr Lisa Casinella doing a combination of sport horse and TB racehorse work. Again, the majority of the work was lameness based and included a few pre purchase exams.

The facilities around Ocala are nothing short of spectacular with no expense spared. I spent one day with Dr Shane Harley, who does a lot of work on showjumpers at the World Equestrian Center. The show ground is a town in its own right, with multiple shopping areas, two large hotels and a large equine and small animal veterinary clinic run by the University of Florida on site. Although it was summer, which tends to be the "slower" season for horse showing in Florida, the place was still a hive of activity with shows running most weeks throughout the year. I was lucky enough to receive a tour of the equine clinic which had everything from CT, MRI and surgical facilities to the latest in rehab facilities including a salt room and multiple water treadmills.



Ultrasound imaging with Dr Natasha Werpy

One day Lisa kindly arranged for me to do some ultrasound scanning with Dr Natasha Werpy, who is a diplomate of the American College of Veterinary Radiology and specialises in equine imaging in Ocala. Natasha generously allowed me to use her own horse and gave me some great tips and tricks for scanning stifles.

I would like to express my sincere thanks to Dr Jonathan Hope and the NZERF for awarding me this scholarship. I have taken a lot of learnings out of my discussions with the veterinarians over cases, as well as picking up different ways of diagnosing and treating common conditions. However, I think one of the most valuable parts of my trip was the friendships I have created. I really appreciate the time and efforts these veterinarians and their staff put into my visit and the honesty and thought they put into our conversations between calls. I hope one day I can return the favour by hosting them in NZ!

Travel Report – Dr Angela Hawker

2025 Jonathan Hope Scholarship recipient

Last year I was fortunate to be one of two recipients of the Jonathan Hope Equine Veterinary Scholarship. This allowed me to travel to the United States and spend two weeks at the Colorado State University's (CSU) Johnson Family Equine Hospital. Most of my time was spent with the Sports Medicine and Rehabilitation team, but I was also able to participate in cases with Internal Medicine, Imaging and Ophthalmology. The facilities at CSU are impressive, but it was the team of wonderful people working there that impressed me most. Everybody was welcoming and generous with their time. They were extremely knowledgeable but remained curious and humble, always questioning themselves and asking colleagues for input to get the best outcome for clients and horses. I also enjoyed watching and helping the veterinary students and was really impressed by their attitude.

While the advanced diagnostic options available are enviable, something that was reiterated during my stay was the importance of a thorough physical examination. I was able to spend a day working in the rehabilitation barn with Dr Melissa King alongside the residents. The care and

consideration of each horse's particular challenges when planning the restoration of function with different modalities was at a level out of reach of most humans.

One of the most valuable parts of the trip was increasing my understanding and knowledge of subtle causes of poor performance and discomfort in ridden horses, particularly relating to the back and neck. Musculoskeletal pain is very common and can be misinterpreted by riders as bad behaviour. Increased understanding of these issues will advance the welfare of sport horses. While it was impressive to see the radiographic detail that can be obtained with a powerful Xray machine, meaningful information can be gained from a range of physical exam techniques as well as ultrasound examination. There were several cases during my stay where contrast CT myelogram was used. The information provided by this technique was very valuable and I look forward to the increased availability of CT in New Zealand.

A particular highlight of the experience was being able to stay with Dr Yvette Nout-Lomas, who I met in 2003 during my internship at the Ohio State University. She is one of the medicine specialists



Practising back palpation skills

and one of her areas of expertise is neurological and behavioural disorders, which was fascinating to discuss with her. She is also a fellow rider and marathon runner, so we had plenty of fun outside of work hours. Another familiar face was Dr Keana McCosh who is completing a sports medicine residency and was previously at Waikato Equine Veterinary Centre. In addition, there were many new friends to be made, reminding me that one of the greatest aspects of this profession is the people you meet and the connections you build around the world.

I am profoundly grateful to Jonathan Hope for his generous support, and the NZERF for the travel opportunity.

Sophia Stratford

2025 Salient Trust Young Achiever Award recipient

I am currently based in London, training to become a Master Saddler, qualified saddle fitter, and qualified bridle fitter — the first in New Zealand. I moved here almost two years ago to start my studies at the only full-time saddlery school in the world and have recently graduated. However, it isn't as straightforward as simply graduating and being qualified; the bridle and saddle fitting qualifications are two separate courses, and to become a qualified saddler you must have 4 years of experience, let alone the 7 years' experience required to become a Master Saddler. This all makes it rather tricky to achieve while based in NZ. I was fortunate to already have the right to study in the UK, but having this scholarship has opened so many more doors and I feel unbelievably lucky to be in this position.

The very first thing I did after receiving the scholarship was book a place on a training day run by Frances Roche, MVO. She is a Master Saddler and the course leader of the Society of Master Saddlers bridle fitting course, among many other things. Since then, I've been spending a lot of time doing one-on-one training with her both in the workshop and on the road, learning everything there is to know about bridles and how to make sure they are fitted and designed with the horses' comfort (and consequently performance) as the top priority. It's surprisingly complex and truly fascinating how much a bridle can impact a horse. This is an ongoing arrangement and having that connection has led to so much more.

Being out on the road bridle fitting meant I ran into another Master Saddler, James Turner, who is also a qualified saddle fitter. I spent a couple of days shadowing him for saddle fitting, learning how to adjust flocking in saddles, and doing my first professional tack repair. Shortly after that, I went to Sweden to spend a week with Christina Allansdotter, another qualified saddle fitter. We spent almost the whole time on the road saddle fitting, seeing a wide variety of horses, riders, and saddles with a focus on rider position. Whenever we weren't on the road, I was in the workshop reflocking and adjusting saddles. No tourist destinations for me but I did see a lot of rural Tidaholm! This was a really valuable experience and I am so glad I did it - there's nothing quite like fitting saddles for 12 hours straight to get your eye in.

I have also been able to sit all three of my Level 2 City and Guilds Skills Assessments, which are the first set of exams on the pathway to becoming a qualified or Master Saddler. These are designed to demonstrate intermediate skill levels in bridle making, harness making, and saddle making. I managed to complete all assessments within three weeks with full marks but certainly

not without stress - it was a huge relief to have them all done. I submitted a halter, two bridles, a running martingale, a full harness breeching, a general-purpose saddle, and a partially prepped saddle seat.

I only have a few months left in the UK before returning home temporarily to start setting things up, but I've got a lot planned. I'm off to Northern Ireland to spend a couple of weeks with another Master Saddler, Lucy Cushley, attending a practical bridle fitting course with industry experts as part of my qualification, and shortly after that I've booked a place to watch a dissection of a horse's back at Hartpury University. When I return to the UK next year, I'll be working towards my Level 3 City and Guilds Skills Assessments, completing my bridle fitting qualification, and continuing my saddle fitting training.

I've always been determined to get the absolute most out of my time over here so I can bring home as much knowledge as possible. I've been able to say yes to all of these fantastic opportunities thanks to the Salient Trust and the NZERF, and I am immensely grateful. I look forward to passing on my knowledge to everyone at home when the time comes - I've learned more than I ever thought possible and there's still so much to know.



New Zealand Equine Research Foundation Scholarships and Grants

Salient Trust Young Achiever Award

\$15,000 available annually to assist an individual under the age of 35 in their career in the equine industry

<https://nzerf.org.nz/salient-trust-young-achiever-award>

Closes 31st January annually

Travel Awards

For any travel relating to research and development in the NZ horse industry.

<https://nzerf.org.nz/travel-awards>

Applications received any time

Equine Research Grants

Applications from interested people for funding for projects in the field of equine research.

<https://nzerf.org.nz/research-grants>

Closes 30th April annually

Jonathan Hope Equine Veterinarian Scholarship

\$10,000 available to help a "young at heart" New Zealand-based veterinarian gain practical skills that will be valuable in supporting his or her work within the NZ equine industry.

<https://nzerf.org.nz/jonathan-hope-equine-veterinarian-scholarship>

Closes 31st January annually

Massey Veterinary Student Scholarships

Up to \$3000 awarded to final year students studying full time in the Bachelor of Veterinary Science degree at Massey University who plan to work primarily in the equine industry.

scholarships@massey.ac.nz

Closes 30th September annually

Veterinarian – Farrier Scholarships

\$3,000 each for a veterinarian and a farrier from the same geographic location to attend a suitable course or symposium and/or spend time with colleagues in the USA.

<https://nzerf.org.nz/vet-farrier-scholarship>

Closes 30 November annually

Application forms can be found online via the website: <https://nzerf.org.nz/>

NZ Equine Health Association update

1. Horses on Air Transport

After 15 years of joint development by MPI and equine air transport representatives, the "Guidance Document: Transport of Horses by Air" has now been ratified by MPI. This document provides a legal mechanism for medication to be administered by trained persons to horses travelling in aeroplanes.

2. National Equine Identification and Traceability (NEIT) system

The NEIT system has been operational since October 2025, and the team's focus has now shifted to creating greater awareness of the system and its purpose.

The NEIT system is designed to improve the speed and efficiency of a NZ equine disease incursion response. The system enables responders to rapidly identify and communicate with horse owners, which is essential in any response. Rapid access to reliable population data allows epidemiologists and response agencies to map affected and at-risk animals, model disease spread and implement targeted interventions — all of which reduce the cost and duration of a response.

In order to increase the number of horses registered in NEIT the NZEHA is planning to:

1. Develop processes with equine transport companies (mainly IRT and NZB) to gather data on imported and exported horses.
2. Engage veterinarians to complete implanter applications, using the ex-NZTR standard microchips as an incentive for them to microchip their clients' horses alongside other services.

MPI is preparing legislation to support the mandatory registration of all horses in NZ on the NEIT system. Once this is ready it will be presented to Cabinet for consideration and after that it will be published for public consultation. MPI has indicated that cultural considerations will need to be taken into account, including assessment of the principles of Te Ao Maori and Te Tiriti o Waitangi, which may delay the indicated timeline. A series of 3 webinars will be held, one to industry and two for the public, to present and discuss the options. Key industry stakeholders will be engaged ahead of these and sent an invitation once details are confirmed. Once a decision on legislation has been reached, it will govern the direction of NEIT work.

If legislation is passed, all equine bodies may be required to update internal regulations to require microchipping as part of their entry to studbooks and competitions. To date, a few studbooks have updated their regulations and privacy policies voluntarily to require microchipping for entry into the studbook and allow sharing of data if required during an incursion, i.e. NZ Warmblood Association, Clydesdale Horse Society. Ongoing engagement with these industry groups is required to create conformity across the industry.

3. Biosecurity Levy Increase

A levy is imposed on all horses and germplasm which are imported into or exported from New Zealand. The levy is used to develop tools and strategies to prepare for and manage the consequences of an exotic equine disease incursion into New Zealand. The levy was introduced in 2020 and has not been increased since then. At its last meeting the NZEHA resolved to increase the levy to \$120 on all live horses, \$12 per fresh semen dose, \$1.20 per straw of frozen semen and \$24 per embryo.

4. Import Issues

Recent examples where there was potential for harmful organisms to get past existing quarantine processes have concerned the NZEHA. Efforts to get MPI to introduce more effective control measures have been unsuccessful but NZEHA continues to make a strong scientific case for minimising risk to our industry from imported animals sourced from around the world, usually in the form of additional testing.

5. Equine Influenza Vaccine

NZEHA supplies the Equine Influenza vaccine which is currently used for horses being exported to countries which require vaccination for importation. The initial intention was to ensure access to the vaccine in response to an incursion of Equine Influenza. The stock would be rolled over by using it on the export horses. Unfortunately, with the closure of Singapore and Macau, the demand for vaccine has reduced significantly, which created a risk of vaccines in stock expiring before being used. NZEHA now only holds sufficient doses of vaccine in stock to protect horses being exported but believes its supply chain is well-enough established to allow rapid access to a much larger stock if needed in an emergency.

6. Welfare Committee

The National Animal Welfare Advisory Committee (NAWAC) had signalled a review of the Code of Welfare: Horses and Donkeys. The Equine Welfare and Ethics Committee, under the umbrella of the NZEHA, had established a smaller working group to participate in the review.

Professor Irvine Memorial Scholarship Winner



Jasmine Tanner, lecturer in biometrics at Lincoln University, is the recipient of the Professor Irvine Memorial Scholarship for her research on the effect of different substances on nematode larval migration, which was funded by the NZERF. This study is investigating the use of fertilizer, urea, salts and lime to establish whether these substances affect the migration of equine parasitic larvae (nematodes, cyathostomes) from horse manure into the surrounding pasture, thus becoming available for ingestion and subsequent worm infestation of grazing horses. Controlling the lifecycle of parasites in horses is of increasing concern world-wide as many parasites have become resistant to current worm drenches, leaving horses vulnerable to excessive worm

burdens affecting their health, productivity and welfare. Preliminary results show that lime has no effect, but salt, urea and Epsom salts inhibited larval migration in the lab. These initial findings are now being extended to assess the feasibility of using these substances practically in equine environments.

Jasmine has long been active in equine research, having recently completed an extensive study of the breeding performance of Standardbred mares, which forms part of her PhD thesis and has resulted in the publication of several scientific papers. She also has research interests in animal science and statistical genetics.

Chairman's Corner

As I am writing this it seems that news of global conflict and instability is dominating our lives. However, no matter how dark the global backdrop appears we still have many positive things to focus on, not least of which is the 50 years of great work carried out by the New Zealand Equine Research Foundation.

First conceptualised in 1976 by a group of visionary people in the NZ horse industry, the NZERF was created to facilitate equine research relevant to the NZ industry and ensure that the findings of that research were disseminated to all industry stakeholders. A strong commitment to research and development is fundamental to the survival and prosperity of any industry, and the achievements of the NZERF over the last 50 years are quite remarkable.

Starting out as a funding agency of research and a small number of travel grants the NZERF's activities have evolved into a large portfolio of educational resources for horse owners and trainers. There also has been a huge increase in the number and value of scholarships awarded to develop the wealth of talent within the NZ horse industry.

The following is a summary of the NZERF's activities for the last 50 years:

- 1) Research funded: \$2.6 million resulting in more than 200 published articles

- 2) Lecture series run: 33
- 3) Information booklets published: 22
- 4) Vet/farrier scholarships awarded: 36 (\$110K) (initially funded by the Pye family).
- 5) Massey Veterinary Student scholarships awarded: 50 (\$100K)
- 6) Young Achiever awards: 20 (\$300K). This award is currently funded by Jenny Kain's Salient Trust and was previously sponsored by Waikato Stud and Valachi Downs Stud.
- 7) Young Veterinarian awards: 10 (\$100K). This award has been entirely funded by Dr Jonathan Hope.
- 8) Educational videos made: 8
- 9) Regular presence at Equifest.

This work has been achieved through the hard work and passion of our 14 board members and the generous support of over 50 sponsors, to whom we are most grateful. It is a record we are very proud of and well worthy of a celebration for reaching this significant milestone!

Dr Tim Pearce, NZERF Chairman

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