



## BRITISH HORSE COUNCIL

### Winter Meeting, 11 December 2020

#### HBLB Equine Scientific Research Update

Something we can all agree on is that 2020 has not gone as planned. Nothing has escaped the effects of COVID-19, and, as far as the racing industry is concerned, that goes for scientific research as well as the day to day activity in training centres, on studs and on racecourses.

In 2020, access to university labs and field work has been severely restricted, meaning that many of the ongoing projects are being delayed. A frustrating situation for all. Everything will be finished, but it will take longer than planned.

But first, the good news! Three new three-year research projects started in 2020:

- Identification of how *Streptococcus zooepidemicus* infects the horse, and steps towards an effective vaccine  
Professor Julian Parkhill, Cambridge
- Investigation of the equine genome to identify which genes are virus resistant and could help in the development of improved vaccines  
Dr Pablo Murcia, Glasgow
- Examination of a newly emerging strain of the foal infection, *Rhodococcus equi*, that is resistant to current therapies.  
Professor Jose Vazquez Boland, Edinburgh

The HBLB's award criteria are based on the priorities of Racing's stakeholders, with applications assessed on their scientific merit, and the relevance and likely impact to the Thoroughbred in racing, breeding and rearing.

Our small project awards are for one year, and limited to around £10,000. They are open to anyone working full time in Racing. The 2020 programme includes:

- How and why disease spreads between racing and non racing horses
- Evaluation of a potential new treatment for African Horse Sickness
- Development of an image analysis system to measure respiratory changes
- New method of detecting and identifying multidrug resistant bacterial infections
- Examining antibody responses to equine Hepaciviruses to inform vaccine design
- Survey of the prevalence and impact of back pain in the training of the racing Thoroughbred
- Development of a new local anaesthetic technique for back surgery in horses
- Impact of abnormal chromosome numbers on breeding and developmental disorders
- Validation of a new equine temperature sensor
- Further investigation of stem cell therapy for osteoarthritis in horses
- Examination of horse, and horse and rider, movement over different surfaces
- Potential environmental chemical effects on Thoroughbred breeding stallions.



Since the early days of the HBLB, the Board has supported post-graduate education for qualified vets to further their equine career through higher clinical or research qualifications. A new research scholarship has started at Bristol University under the supervision of Dr Laura Peachey, herself a HBLB scholar. All the scholarships have a strong project focus and this one will be looking at equine parasitology, concentrating on drug-resistance – something of increasing importance for equines.

The Board also offers Equine Post-Doctoral Fellowships, aimed at helping the very best young research vets to develop their careers, and become the research pioneers of the future.

Dr Caroline Chauché (Edinburgh) is working on identifying the long term effects of Equine Influenza on the respiratory system. The ‘flu outbreak in 2019 showed how disruptive this disease can be to the equine world as a whole. Caroline’s work takes a fresh approach in looking at the longer term consequences of infection and what can and should be done in terms of preventative and management practices.

Tendon injuries are amongst the most common musculoskeletal problems for racehorses. Tendons don’t heal easily, so injury can require long rehabilitation or end a racing career. Dr Agnieszka Turlo, at Liverpool University, will be examining why the efficacy of current therapies is so variable and investigating what works and what doesn’t, and why. The objective is to identify new, improved and more predictable methods of promoting healing.

As well as this new work, there are 12 major projects underway targeted for completion within the next two years:

Why do horses roar? From the beginning to the end of recurrent laryngeal neuropathy ?	Professor Richard Piercy	RVC
Role of VapA in the pathogenesis of R equi	Professor Paul Pryor	York
Equine respiratory muscle training: a new clinical and performance enhancing tool	Dr Kate Allen	Bristol
Shoe assessment for equine racing	Dr Thilo Pfau	RVC
Axonal transport and survival in equine recurrent laryngeal neuropathy	Professor Richard Piercy	RVC
New avenues for intervention in age-related degenerative disease in the horse: unravelling the role of altered RNA splicing and senescence in tendons	Professor Roger Smith	RVC
Profiling microRNA for the prediction of orthopaedic disease in the TB racehorse	Dr Sarah Taylor	Edinburgh
Does early life experience affect injury risk and performance in later life?	Professor Kristien Verheyen	RVC
Using a cell based system to identify the genetic mechanisms behind fracture risk in Thoroughbred horses	Dr Debbie Guest	RVC
Development of a nasal epithelial brush model to study equine respiratory disease in the racehorse	Professor Mark Chambers	Surrey
Exploiting microvesicle small non-coding RNA and protein cargo in osteoarthritis for early diagnosis and treatment	Dr Mandy Peffers	Liverpool
A reverse genetics strategy for improved development of equine influenza vaccines	Professor James Wood	Cambridge

On top of these, there are also nine education awards and another five small projects underway.



The not so good news is that, because of the economies forced on the HBLB by COVID, we did not have a grant round this year, meaning that there will be no new HBLB work starting in 2021. The next round is expected to launch in Spring 2021.

More positively, we are delighted to report that we have been able to relocate all our projects that were ongoing at the AHT at the point it closed. This success is due to a lot of hard work on the part of former AHT staff and is much appreciated.

The HBLB is very grateful to The Racing Foundation, the TBA and BEBF for their continued collaboration in funding equine scientific research.

Annie Dodd  
Grants Manager

Horserace Betting Levy Board  
21 – 27 Lamb's Conduit Street  
London WC1N 3NL  
Direct Telephone: +44 (0)207 504 4014  
Telephone: +44 (0)20 7333 0043 x873 Mobile: 07785 390922