TRACK/SURFACES

Grayson-Jockey Club Research Archives

The surface that a horse trains and competes on can impact their health and performance.

Researchers found that hard surfaces, shallow footing depths, and compacted footing could increase horses' injury risk. In comparison, a soft or deep arena surface has too much cushion, making the footing unstable. As the surface shifts under the hoof, the horse is forced to work harder for balance and support, which can often lead to inflammation of the leg's soft tissues and other injuries.

Grayson is proud to have funded the following projects to find answers to competition surfaces:

<u>Training Programs for Prevention of Fetlock Injury</u>

University of California- Davis, *Principal Investigator: Susan Stover CO-PIs: David P. Fyhrie, Tanya Garcia-Nolen, Sarah Shaffer*

The purpose of this study was to predict proximal sesamoid bone fracture in racehorses from a calibrated computational model that incorporates training programs, track surface properties, and bone's reparative processes.

Years: 2019-2020 TOTAL - \$83,331

Training and Surfaces for Injury Prevention

University of California- Davis, Principal Investigator: Susan Stover

Co-Pls: David Fyhrie; Tanya Garcia; Sarah Shaffer

This study was to access the Risk for bone fracture in the fetlock joint due to training program and race surface properties to determine using computer models that simulate bone damage and repair.

Year: 2016-2017 TOTAL - \$183,582

Optimization of Racetrack Surface Properties

University of California – Davis, *Principal Investigator: Susan Stover Co-Pls: Jennifer Symons; David Hawkins; David Fyhrie; Shrinivasa Upadhyaya*This study was designed to create a computer modeling and simulation approach to be used to create an economical tool for investigation of race surface characteristics on fetlock motion, and thus risk for injury.

Years: 2014-2015 TOTAL -\$50,648

Race Surface Optimization for Fetlock Injury Prevention

University of California - Davis, Principal Investigator: Susan Stover & Mont Hubbard

Co-Pls: Shrinivasa Upadhyaya; Tanya Garcia; Jacob Setterbo

Year: 2010 TOTAL - \$61,864

Track Banking & Asymmetry of Hoof Loading

University of Guelph, *Principal Investigator: Jeffrey Thomason Co-Pls: M. Peterson (UN of Maine); C. W. McIlwraith (UN of COL);*

B. Woodward (Woods Hole Oceanographic)

Year: 2010 TOTAL -\$36,761

Validation of Laboratory Assessment of Track Surfaces

University of California – Davis, *Principal Investigator: Susan Stover Co-Pls: Mont Hubbard; Jacob Setterbo; Shrinivvasa Upadhyaya; Tanya Garcia*

Year: 2009 TOTAL - \$49,786

Performance Parameters for Engineering Track Management

Colorado State University, Principal Investigator: C. Wayne McIlwraith

Co-PI: Michael Peterson (UN of Maine)

Year: 2008 TOTAL - \$43,838

Effects of Dirt, Turf & Polytrack Racing Surfaces on Hoof Loads

University of California – Davis, *Principal Investigator: Susan Stover*

Co-PI: Maury Hull

Year: 2005 TOTAL - \$51,294

The Horse-Racetrack Interface: the Effect of Shoeing on Impact Trauma

University of Pennsylvania, Principal Investigator: David Nunamaker

Co-Pls: Barbara Dallap

Years: 1999-2000 TOTAL -\$52,335