

FOCUS 2

Investigations of the Origins of Neuro-Musculoskeletal Disease

- a. Neuro-musculoskeletal pain and dysfunction
- b. Biomechanics and sensory input
- c. Repetitive stress response
- d. Cell markers

Publications and Presentations

Textbook Chapters

Dow S, Pezzanite L, Chow L. Immunotherapy options for managing chronic infectious diseases. *Small Animal CVT*. In press.

Rawlinson JE, Pezzanite L, Griffenhagen G. Local anesthesia of the equine head and neck. *Large Animal Local Anesthesia*. Wiley Publishing. In press.

Refereed Publications

Brock B, Greer H, Honnas C, Gilleland B, Barrett M, Moore J, Cohen N. A randomized, self-controlled case series evaluating core osteostixis of osseous cyst-like lesions of the navicular bone to improve lameness in horses with podotrochlear syndrome. *Veterinary Medicine (Auckland)* 2023 March; 14:35-46. PMID: 36945679.

Cassano J, Leonard B, Martins B, Vapniarsky N, Morgan J, Dow S, Wotman K, Pezzanite L. Preliminary evaluation of safety and migration of immune activated mesenchymal stromal cells administered by subconjunctival injection for equine recurrent uveitis. *Frontiers Veterinary Science* 2023 December; 10:1293199. PMID: 38162475.

Helbling J, Spittler A, Sadar M, Santangelo K. Optimization of overhead enclosure monitoring in juvenile male Dunkin Hartley guinea pigs (*Cavia porcellus*). *Lab Animals* 2023 October; 57(5):552-564. Epub April. PMID: 37070354.

Johnson S, Sikes K, Thampi P, McConnell A, Coghlan R, Johnstone B, Santangelo K, Frisbie D. Fast, non-eccentrically loaded exercise worsens tendinopathic healing responses in a murine model. *American Journal of Veterinary Research* 2023 April; 84(6). PMID: 37044374.

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Kawahisa-Piquini G, Bass L, Pezzanite L, Moorman V. Effect of age at training initiation on hoof morphology and lameness in juvenile American Quarter Horses. *Equine Veterinary Journal* 2023 September; 55(5):765-776. Epub January. PMID: 36572927.

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Kim A, Duerr F, Phillips J, Samulski R, Grieger J, Goodrich L. Serotype-specific transduction of canine joint tissue explants and cultured monolayers by self-complementary adeno-associated viral vectors. *Gene Therapy* 2023 April; 30(3-4):398-404. PMID: 36261499.

Marshall-Gibson M, Durham M, Seabaugh K, Moorman V, Ferris D. Survey of equine veterinarians regarding primary equine back pain in the United States. *Frontiers Veterinary Science* 2023 July; 10:1224605. PMID: 37565081.

Koch D, Johnson J, Smith Q, Brekhus C, Gadomski B, Palmer R, Easley J, Nelson B. Biomechanical evaluation of interlocking nail and locking compression plating for stabilization of ovine critical-sized segmental tibia defects. *Annals of Translational Medicine* 2023 March; 11(6):258. PMID: 37082686.

Menjivar N, Gad A, Thompson R, Meyers M, Hollinshead F, Tesfaye D. Bovine oviductal organoids: a multi-omics approach to capture the cellular and extracellular molecular response of the oviduct to heat stress. *BMC Genomics* 2023 October; 24(1):646. PMID: 37891479.

Middlebrooks B, McCue P, Nelson B, May E, Divine C, Barton C, Conley A. Monorchidism in a Phenotypic Mare With a 64,XY, SRY-Positive Karyotype. *Journal of Equine Veterinary Science* 2023 July; 126:104232. Epub February. PMID: 36736748.

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Obaid N, Morioka K, Sinopoulou E, Nout-Lomas Y, Salegio E, Bresnahan J, Beattie M, Sparrey C. The biomechanical implications of neck position in cervical contusion animal models of SCI. *Front Neurology* 2023 June; 14:1152472. PMID: 37346165.

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Timkovich A, Sikes K, Andrie K, Afzali M, Sanford J, Fernandez K, Burnett D, Hurley E, Daniel T, Serkova N, Donahue T, Santangelo K. Full and Partial Mid-substance ACL Rupture Using Mechanical Tibial Displacement in Male and Female Mice. *Annals of Biomedical Engineering* 2023 March; 51(3):579-593. PMID: 36070048.

Wai G, Zdurowski S, Zhong H, Nielson JL Ferguson A, Strand S, Moseanko R, Hawbecker S, Nout-Lomas Y, Rosenzweig E, Beattie M, Bresnahan J, Tuszyński M, Roy R, Edgerton V. Emergence of functionally aberrant and subsequent reduction of neuromuscular connectivity and improved motor performance after cervical spinal cord injury in Rhesus. *Frontier Rehabilitation Science* 2023 June; 4:1205456. PMID: 37378049.

Webster A, Pezzanite L, Hendrickson D, Griffenhagen G. Review of intra-articular local anaesthetic administration in horses: Clinical indications, cytotoxicity, and outcomes. *Equine Veterinary Journal* 2023 November. PMID: 37940372.

Research Abstracts, Presentations, Proceedings

Bus R, Nelson B. Optimizing an in vitro model of equine articular cartilage degeneration. *CVMBs Veterinary Summer Scholars program Science Slam.* Fort Collins, CO.

Bus R, Nelson B. Optimizing an in vitro model of equine articular cartilage degeneration. *National Veterinary Summer Scholars Symposium.* San Juan, Puerto Rico.

Gadomski B, Labus K, Johnson J, Nelson B, Puttlitz C, Goodrich L. Biomechanical Comparison of Fresh and Cryopreserved Human Osteochondral Allografts. *International Cartilage Repair Society Scientific Meeting.* Sitges, Spain. Poster.

Haussler K. Asymmetry in Sport Horses: Defining Laterality. Is it laterality or just asymmetry? *First Annual Equine Laterality Workshop, International Taskforce on Laterality in Sport Horses, Utrecht, The Netherlands.*

Kassel B, Montoya T, Easley J, Santangelo K, Sikes K. Age and Sex-related Effects on Myotendinous Junction Injury In Rats. *Orthopaedic Research Society.* Dallas, TX.

Lu A, Sikes K, Guo P, Huard M, Santangelo K, Tashman S, Narkar V, Huard J. Skeletal Muscle Atrophy After ACL Rupture Can Be Mitigated by ERR α Overexpression in Skeletal Muscle. *Orthopaedic Research Society.* Dallas, TX.

Michalko B, Sikes K, Brekhus C, Johnson J, Easley J, Nelson B. Biomechanics of the LDE and ACL in ovine stifle stability for a novel model of posttraumatic osteoarthritis. *CVMBs Research Day, Fort Collins, CO.*

Nelson B. Pursuit of a Chronic Tendinopathy Model in the Horse: A more representative way to investigate tendon therapies? *TMI Research in Progress Seminar (RIPS) series.* Fort Collins, CO. July 5.

Potter A, Van Zeeland E, Burton L, Easley J, Nordgren T, Sikes K. Characterization of the FAT-1 Mouse Strain in a Non-Surgical Model of ACL Rupture. *University of Colorado Anschutz Medical Campus Orthopaedic Research Symposium.* Denver, CO.

Rodriguez N, Santangelo B, Sikes K, Santangelo K. Development of a Custom System to Induce Mechanical ACL Rupture In Guinea Pigs. *Rocky Mountain Bioengineering Symposium.* Fort Collins, CO.

Sikes K, Johnson J, Michalko B, Brekhus C, Montoya T, Easley J, Nelson B. Biomechanical Contributions of The LDE And ACL In The Ovine Stifle: Implications For A Novel Model Of Post-traumatic Osteoarthritis. *Orthopaedic Research Society.* Dallas, TX. Poster.

Van Zeeland E, Montoya T, Burton L, Saviola S, Santangelo K, Easley J, Sikes K. Sex-Specific Anterior Cruciate Ligament Proteomes Following Non-Surgical Rupture. *University of Colorado Anschutz Medical Campus Orthopaedic Research Symposium.* Denver, CO.

Van Zeeland E, Kassel B, Wist S, Easley J, Santangelo K, Sikes K. Elucidating Sex Differences in The Response to Anterior Cruciate Ligament Injury Following Mechanical Ligament Rupture. *Orthopaedic Research Society.* Dallas, TX. [Mentee Award: Second Place, Poster Presentation]

Van Zeeland E, Kassel B, Montoya T, Santangelo K, Easley J, Sikes K. Sex differences in the response to anterior cruciate ligament injury following mechanical rupture in a mouse model. *CVMBs Research Day, Fort Collins, CO.* [Mentee Award: First Place, Early Career, Oral Presentation, Translational]

