

**BIOMEDICAL & VETERINARY SCIENCES  
GRADUATE PROGRAM**



**ANNOUNCES**

The Master of Science Seminar and Examination  
of

**Ricky Trahan, DVM**

**“Effects of Three Corticosteroids on  
Equine Articular Cocultures In Vitro”**

**Friday, April 27, 2018  
1:00 pm  
VMIA Classroom 220**

## Bio



Dr. Trahan is a graduate of St. George's University School of Veterinary Medicine in 2013 with his clinical training at the VMRCVM in 2012. He completed a 16 month internship at Wilhite & Frees Equine Hospital in 2014. He returned to the VMRCVM to complete a Large Animal Surgical Residency in 2017. Following his residency he joined the Equine Field Service department and has recently accepted an associate surgeon position returning to Wilhite & Frees Equine Hospital.

### Funded by

Virginia–Maryland College of Veterinary Medicine  
VMCVM Office of Research and Graduate Studies  
Virginia Horse Industry Board  
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## Lay Language Abstract

Recently data suggests that isoflupredone acetate (Predef 2x<sup>®</sup>) is commonly administered intra-articularly for treatment of joint disease (osteoarthritis) in horses. Although much data has been published regarding effects of other corticosteroids on cartilage, to our knowledge there have been no similar studies of the effects of isoflupredone acetate. With increased scrutiny from the general public and more stringent control of medication use by regulatory agencies, determination of information regarding such common intra-articular therapies is imperative. In addition, prior studies have only evaluated the effects of corticosteroids on cartilage, whereas other joint tissues (subchondral bone and synovium) have been shown to be important to the biological responses of joints. Therefore, this study was conducted with a co-culture model incorporating synovial tissue, articular cartilage, and subchondral bone within an inflammatory environment (via stimulation with interleukin-1 $\beta$ ). The effects of various concentrations of methylprednisolone acetate (MPA), triamcinolone acetonide (TA), and isoflupredone acetate (IPA) on joint tissues were determined via measurement of selected biomarkers. This study provided the first data regarding biological effects of IPA on joint tissues of horses, and the first comparison of such effects with those of other corticosteroids commonly used intra-articularly for the treatment of joint disease in horses.

## Publications

Byron CR, **Trahan RA**. Comparison of the effects of interleukin-1 on equine articular cartilage explants and cocultures of osteochondral and synovial explants. *Front. Vet. Sci.*, 20 September 2017 | <https://doi.org/10.3389/fvets.2017.00152>

## Presentations

Effects of three corticosteroids on equine synovium, cartilage and subchondral bone in vitro. Poster Presentation at 29th

Annual VMRCVM Graduate Research Symposium. March 15th, 2018.

In vitro effects of three corticosteroids on inflammatory coculture of equine synovium, cartilage and subchondral bone. Podium Presentation at 28th Annual VMRCVM Graduate Research Symposium. March 16, 2017.

Effects of three corticosteroids on equine synovium, cartilage, and subchondral bone in vitro. Poster Presentation at 2016 ACVS Surgery Summit. October 6, 2016.

Effects of three corticosteroids on equine synovium, cartilage, and subchondral bone in vitro. Poster Presentation at 27th Annual VMRCVM Graduate Research Symposium. March 17th, 2016.

### **Examination Graduate Committee**

#### **Major Advisor/Chair**

Chris Byron, DVM, MS, DACVS  
Associate Professor  
Department of Large Animal Clinical Sciences

#### **Graduate Advising Committee Members:**

Linda Dahlgren, DVM, PhD, DACVS  
Associate Professor  
Department of Large Animal Clinical Sciences

R. Scott Pleasant, DVM, MS, DACVS  
Director of Equine Podiatry Service  
Department of Large Animal Clinical Sciences

