

# minneapolis 2015



AMERICAN COLLEGE OF VETERINARY RADIOLOGY

## Annual Scientific Meeting

October 7–10, 2015

Marriott City Center | Minneapolis, MN

## Thursday, October 8, 2015

7:00 am	<i>Registration Opens</i>	4 <sup>th</sup> Floor Registration
7:00 - 7:50 am	LADIS Society Meeting	Ballroom 1-2
7:50 - 8:00 am	<b>Welcome Remarks and Announcements</b> Dr. Mauricio Solano, Program Chair	Ballroom 1-2
8:00 - 8:15 am	<b>ACVR President's Address</b> Dr. Elizabeth Watson	Ballroom 1-2
8:15 - 9:15 am	<u>ACVR Keynote Speaker</u> Harprit Bedi, MD, Assistant Professor, Tufts University Medical School, Boston, MA	Ballroom 1-2
9:15 - 10:15 am	<b>Small Animal Sports Medicine CE</b> (Includes <u>Ultrasound Keynote Speaker</u> ) Drs. Cristi R. Cook, DACVR and James L. Cook, ACVS	Ballroom 1-2
10:15 - 10:45 am	<i>Break with Exhibitors</i>	Ballroom 3-4
10:45 - 11:45 am	<b>Equine Sports Medicine CE</b> Drs. Meghan Lustgarten, DACVR and Rich Redding, DACVS	Ballroom 1-2
11:45 - 1:15 pm	<i>Lunch and Learn</i> "Non-academic Residencies; Saving Our Specialty?" Sponsored by Antech Imaging Services Everyone Welcome	Ballroom 1-2
11:45 - 1:15 pm	OR <i>Lunch on Your Own</i>	
1:15 - 2:15 pm	<u>LADIS Keynote Speaker</u> <b>Non-Musculoskeletal Equine Ultrasound</b> (Focus on Abdomen and Thorax) Mary Beth Whitcomb, DVM	Ballroom 1-2
	<b>Scientific Session 1</b>	Ballroom 1-2
2:30 - 2:42 pm	<b><u>MAGNETIC RESONANCE AND RADIOGRAPHIC ASSESSEMENT OF THE DISTAL ENTESIS OF THE DEEP DIGITAL FLEXOR TENDON IN THE HORSE.</u></b> V. Janvier, J. Olive, Y. Rossier. University of Montreal – Faculty of Veterinary Medicine – J2S2M2, Saint-Hyacinthe, Quebec, Canada.	

2:42 - 2:54 pm **POSITRON EMISSION TOMOGRAPHY OF THE EQUINE DISTAL LIMB: FEASIBILITY AND PILOT DATA.** M. Spriet, D. Beylin, P. Espinosa, P. Stepanov, V. Zavarzin, S. Schaeffer, S. Katzman, L.D. Galuppo. University of California, Davis, California, 95616 and Brain Biosciences, Inc., Rockville, MD, 20852.

2:54 - 3:06 pm **COMPUTED TOMOGRAPHY OF TYMPANIC BULLAE IN PRE-WEANED DAIRY CALVES DIAGNOSED WITH PNEUMONIA.** G. Clausen, S. Nemanic, J. Vanegas, S.M. Stieger-Vanegas and K. P. Poulsen. Oregon State University, Oregon, 97330.

3:06 - 3:18 pm **ULTRASONOGRAPHY OF THE EQUINE SACRAL NERVES, TECHNIQUE APPEARANCE AND REFERENCE VALUES IN 28 WARMBLOOD HORSES.** P. Espinosa<sup>1</sup>, P. Benoit, I. Salazar, J. De la Fuente, P. Heiles. Department of Surgical & Radiological Sciences, University of California, Davis, CA, 95616. Clinique Equine des Breviaires (Les Breviaires, France): Dpto. de Producción Animal. Facultad de Veterinaria. Universidad Complutense de Madrid. (Madrid, Spain).

3:18 - 3:30 pm **ULTRASONOGRAPHIC DIAGNOSIS OF FEMORAL FRACTURES IN LARGE ANIMALS.** S. Jones, M.B. Whitcomb, B. Vaughan, G. Shields. William R. Pritchard Veterinary Medical Teaching Hospital, Department of Surgical & Radiological Sciences, University of California, Davis, CA 95616.

3:30 - 4:00 pm *Break with Exhibitors* Ballroom 3-4

4:00 - 5:00 pm **Peer Review of Manuscripts Submitted to VRU: Why and How?** Ballroom 1-2  
Drs. Jeryl Jones, Editor-in-Chief  
Christopher Lamb, Associate Editor  
Veterinary Radiology & Ultrasound Journal

**Scientific Session 2** Ballroom 1-2  
**(Resident Presentations)**

5:00 - 5:12 pm **USE OF A 15-CHANNEL KNEE COIL VERSUS A 6-CHANNEL BODY MATRIX COIL FOR MAGNETIC RESONANCE IMAGING OF THE DISTAL EQUINE LIMB AT 1.5T.** L.S. Shaikh, S.P. Holmes. University of Georgia, GA 30602.

- 5:12 - 5:24 pm **CONTRAST-ENHANCED ULTRASONOGRAPHIC EVALUATION OF SMALL INTESTINAL VIABILITY IN DOGS WITH OBSTRUCTIVE FOREIGN MATERIAL.** C.J. Brouwer, D.A. Jiménez, A. Sharma, E.W. Howerth, M.A. Radlinsky. University of Georgia, GA 30602.
- 5:24 - 5:36 pm **ULTRASOUND AND COMPUTED TOMOGRAPHIC FUSION FOR CANINE HEPATIC LESIONS.** M.G. Evola, M. Lustgarten, J. Doukas, G.S. Seiler. North Carolina State University, North Carolina, 27607.
- 5:36 - 5:48 pm **DOES HEAD AND NECK POSITION ALTER VERTEBROBASILAR ARTERIAL BLOOD FLOW IN DOGS?** J. Cardwell, P.V. Scrivani, A.E. Yeager. Cornell University, NY, 14850.
- 5:48 - 6:00 pm **COMPARISON OF OFF-SITE SMART PHONE JPEG-FORMAT ABDOMINAL RADIOGRAPHS VERSUS DICOM-FORMAT STANDARD WORKSTATION FOR DETERMINING SMALL INTESTINAL MECHANICAL OBSTRUCTION IN DOGS AND CATS.** P. Noël, A. LeRoux, A. Fischetti. The Animal Medical Center, New York, 10128.

*Adjourn for the Day*

- 6:30 - 8:30 pm **ACVR Welcome Reception** Windows and Terrace  
 Sponsored by: 6<sup>th</sup> Floor  
 Antech Imaging Services  
 Universal Medical Systems

**POSITRON EMISSION TOMOGRAPHY OF THE EQUINE DISTAL LIMB: FEASIBILITY AND PILOT DATA.** M. Spriet, D. Beylin, P. Espinosa, P. Stepanov, V. Zavarzin, S. Schaeffer, S. Katzman, L.D. Galuppo. University of California, Davis, California, 95616 and Brain Biosciences, Inc., Rockville, MD, 20852.

**Introduction/Purpose:** Positron Emission Tomography (PET) had never been performed in the horse, primarily due to restriction in the availability and accessibility of PET scanners for larger patients. Another concern has been the exposure of operators to high level of radiation. Recent improvement in the PET technology has resulted in the development of high-sensitivity, high-resolution portable PET instruments that can accommodate equine distal extremities. We hypothesized that such scanners would be able to produce PET images of the equine distal limb of diagnostic quality, using reasonable amount of radiation.

**Methods:** Three horses from a research herd with known naturally occurring distal limb lesions were included in the study. The horses were imaged with a large bore (22.5 cm), portable, preclinical PET instrument with a 22 cm axial field of view and 2 mm spatial resolution. All 3 horses were imaged using  $^{18}\text{F}$ -Fluorodeoxyglucose ( $^{18}\text{F}$ -FDG) and 1 horse was also imaged with  $^{18}\text{F}$ -Sodium Fluoride ( $^{18}\text{F}$ -NaF). Horses were placed under general anesthesia before intravenous injection of the radiopharmaceutical. Imaging started 45 min after injection. Imaging time for each anatomical area was 15 minutes. Both front feet and fetlocks were imaged for  $^{18}\text{F}$ -FDG scans. One carpus and one tarsus were imaged in addition to the front limb distal extremities for the F-NaF scans. Computed tomographic (CT) images of the areas imaged with PET were acquired under general anesthesia on a different day.

**Results:** A range of 23 to 35 mCi (851 to 1,295 MBq) was used for the  $^{18}\text{F}$ -FDG scans. 22 mCi (814 MBq) was injected for the  $^{18}\text{F}$ -NaF scan. Initial exposure was higher than 50 mRem/hour at the surface of the body at the level of the thorax, but was inferior to 25 mRem/hour 2 hours after injection. A maximum of 10 and 2 mRem/hour were measured 4 hours after injection at the surface of the body and at 1 meter, respectively. Focal increased uptake of  $^{18}\text{F}$ -FDG was appreciated at a site of lysis of the flexor cortex of a navicular bone. Different intensities of  $^{18}\text{F}$ -FDG uptake were appreciated at various lesion sites in deep and superficial digital flexor tendons. Focal areas lacking  $^{18}\text{F}$ -FDG uptake were present in the lamina of a horse with chronic active laminitis. The  $^{18}\text{F}$ -NaF scans revealed focal increased uptake at the distal aspect of navicular bones, at the site of collateral ligament insertion, in some but not all enthesiophytes and in the subchondral bone in a metacarpal condyle and a central tarsal bone.

**Discussion/Conclusion:** PET images of the equine distal limb of diagnostic quality could be obtained with reasonable amount of radiation exposure. The  $^{18}\text{F}$ -FDG scans provided useful information regarding the activity of soft tissue lesions, and detected areas of laminar necrosis in a case of laminitis. The  $^{18}\text{F}$ -NaF scan allowed differentiation between active and inactive areas of bone resorption or proliferation, and detected subchondral modeling not appreciated on CT images. PET imaging could gain a role in staging lesions or detecting occult subchondral bone lesions in the horse.