

Advanced Equine Cardiology: Delving into the Heart of the Matter
November 2-4, 2023
Penn Vet's New Bolton Center | Kennett Square, PA

DAY 1 Thursday, November 2, 2023		
Time (Eastern Time)	Topic	Presenter(s) / Location
7:30-8:00 am	Registration	<i>Lobby</i>
8:00-8:15 am	Welcome and Introductions	<i>Dr. Virginia Reef Woerner Amphitheater</i>
8:15-9:15 am	Lecture: In Depth Assessment of the Mitral Valve <ul style="list-style-type: none"> • Understand mitral valve anatomy. • Recognize valve pathology resulting in valvular regurgitation • Methods of assessing severity of regurgitation 	<i>Dr. Virginia Reef Woerner Amphitheater</i>
9:15-9:45 am	Lecture: Cardiac Size: Is It Normal? <ul style="list-style-type: none"> • Understand reference values for individual breeds • Be able to adjust for BW 500kg • Learn how to compare to internal references (Ao diameter) 	<i>Dr. Celia Marr Woerner Amphitheater</i>
9:45-10:15 am	Lecture: Patterns of Atrial & Ventricular Volume Overload <ul style="list-style-type: none"> • Recognize left ventricular volume overload of MR and AR • Recognize right ventricular volume overload • Recognize right atrial and left atrial volume overload 	<i>Dr. Virginia Reef Woerner Amphitheater</i>
10:15-10:30 am	Break	<i>Lobby</i>
10:30-11:00 am	Lecture: Systolic Dysfunction: Assessing the Subtleties <ul style="list-style-type: none"> • Understand effects of age on myocardial function • Learn to recognize early systolic dysfunction • Understand the value of myocardial strain with systolic dysfunction 	<i>Dr. Celia Marr Woerner Amphitheater</i>

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DAY 1 (continued) Thursday, November 2, 2023		
Time (Eastern Time)	Topic	Presenter(s) / Location
11:00-11:30 am	Lecture: Diastolic Dysfunction: What Do We Know? <ul style="list-style-type: none"> Learn how to assess diastolic function in horses with aortic regurgitation Understand diastolic dysfunction that occurs with myocardial disease Recognize diastolic dysfunction with pericardial disease 	<i>Dr. Annelies Decloedt Woerner Amphitheater</i>
11:30 am-12:00 pm	Lecture: Treatment of Advanced Valvular Heart Disease and Congestive Heart Failure <ul style="list-style-type: none"> Identify when an ACE inhibitor would be indicated Learn how to use diuretics in a horse with CHF Learn about pimobendan for CHF 	<i>Dr. Cris Navas de Solis Woerner Amphitheater</i>
12:00-1:00 pm	Lunch	<i>Alumni Hall</i>
1:00-6:00 pm (Break 3:15-3:45)	Echocardiography Labs – 1 hour per station with 30-minute break in the middle; rotate through 4 of 6 stations Horses with a variety of cardiac abnormalities will be echoed with assistance from the instructors. Stations will focus on right parasternal imaging planes and measurements, left parasternal imaging planes and measurements, color flow and continuous wave Doppler evaluation of jets and shunts, color and pulsed wave tissue Doppler imaging, obtaining images for speckle tracking and 4D echocardiography. <ul style="list-style-type: none"> Obtain the standard right and left parasternal views for 2D and M-mode echocardiography Apply color flow Doppler echocardiography appropriately to find regurgitant jets and shunts Apply tissue Doppler to the atrial and ventricular myocardium for evaluation of myocardial contractility and obtain appropriate images for speckle tracking 	<i>Dr. Gunther van Loon, Dr. Annelies Decloedt, Dr. Celia Marr, Dr. Cris Navas de Solis, Dr. Virginia Reef, Dr. JoAnn Slack Scott Building (5 stations), Treadmill Stall (East)</i>
6:00 – 7:00 pm	Welcome Reception	<i>Allam House</i>

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DAY 2 Friday, November 3, 2023		
Time (Eastern Time)	Topic	Presenter(s) / Location
8:00-10:00 am	Echocardiography Lab (continued) – 1 hour per station with no breaks; rotate through remaining 2 stations	<i>All Scott Building (5 stations), Treadmill Stall (East)</i>
10:00-10:30 am	Break	
10:30-10:45 am	Lecture: The New 12 lead ECG: How to Obtain and What Can We Learn? <ul style="list-style-type: none"> • Learn about new applications of vector cardiography in the horse • Understand information obtained from new equine 12 lead ECG • Learn how to use information obtained from new equine 12 lead ECG 	<i>Dr Gunther van Loon Woerner Amphitheater</i>
10:45-11:20 am	Lecture: AF and Atrial Tachycardia (AT): What You Need to Know <ul style="list-style-type: none"> • Understand the differences between pathophysiology and surface ECG • Learn how to use AF cycle length measurements • Understand the use of cardiac mapping and ablation 	<i>Dr. Gunther van Loon Woerner Amphitheater</i>
11:20-11:40 am	Lecture: Accessory Bypass Tract in Horses <ul style="list-style-type: none"> • Learn how to identify accessory bypass tract • Learn about possible treatments • Understand significance of bypass tract on safety of horse and rider 	<i>Dr. Gunther van Loon Woerner Amphitheater</i>
11:40 am-12:10 pm	Lecture: Hypertension, Insulin Resistance and the Heart <ul style="list-style-type: none"> • Learn effects of insulin resistance on the heart • Learn how to measure blood pressure and identify hypertension • Understand treatment of hypertension 	<i>Dr. Cris Navas de Solis Woerner Amphitheater</i>

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DAY 2 (continued) Friday, November 3, 2023		
Time (Eastern Time)	Topic	Presenter(s) / Location
12:10-1:10 pm	Lunch	<i>Alumni Hall</i>
1:10-2:10 pm	Lecture: Advanced Heart Rate (HR) Analysis – How to Use HR and Heart Rate Variability (HRV) for Arrhythmia and Physiology Assessment (Kubios) <ul style="list-style-type: none"> Learn about the sympathetic nervous system and HRV Learn when assessment of HRV is useful Understand use of HR for arrhythmia and physiology assessment	<i>Dr. Cris Navas de Solis Woerner Amphitheater</i>
2:10-2:30 pm	Lecture: Cardiac Troponins: What You Need to Know <ul style="list-style-type: none"> Understand differences in cardiac troponin analyzers (high sensitivity vs traditional assays) Learn optimal timing of cardiac troponins with myocardial injury Assay interference and false positive results 	<i>Dr. JoAnn Slack Woerner Amphitheater</i>
2:30-2:45 pm	Break	<i>Lobby</i>

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DAY 2 (continued) Friday, November 3, 2023		
Time (Eastern Time)	Topic	Presenter(s) / Location
2:45-6:00 pm (Break 4:45-5:00pm)	<p>Interactive Labs – 1 hour per station with 15-minute break in the middle; rotate through 3 of 6 stations</p> <ol style="list-style-type: none"> Evaluating Ventricular Arrhythmias ECGs <ul style="list-style-type: none"> Learn to recognize and characterize ventricular arrhythmias (VAs) Distinguish life-threatening from non-life-threatening VAs Learn what treatment is indicated Diastolic (Dys)function In Depth <ul style="list-style-type: none"> Learn the difference between PW and color TDI Learn how to evaluate diastolic function Understand significance of diastolic dysfunction Echocardiographic Identification of Specific Cardiac Structures <ul style="list-style-type: none"> Learn how to identify the atrial appendages Understand location of sinus node and AV node Learn identification of coronary arteries and other vessels to and from the heart Heart Rate Variability/Use of Kubios <ul style="list-style-type: none"> Learn how to import ECGs into Kubios Learn how to use Kubios for arrhythmia detection with Arioneo and Polar Understand heart rate variability Cardiac Anatomy <ul style="list-style-type: none"> Learn normal valvular anatomy Understand valvular abnormalities and changes in cardiac anatomy Understand changes with congenital cardiac disease Speckle Tracking <ul style="list-style-type: none"> Understand how speckle tracking is performed Become familiar with how speckle tracking is used Appreciate how speckle tracking complements the echocardiographic examination 	<p><i>Dr. JoAnn Slack, Widener Conference Room</i></p> <p><i>Dr. Annelies Decloedt, Moelis Conference Room</i></p> <p><i>Dr. Gunther van Loon, Cardio Exam Room</i></p> <p><i>Dr. Cris Navas de Solis, Woerner Amphitheater</i></p> <p><i>Dr. Virginia Reef, Large Exam Room</i></p> <p><i>Dr. Celia Marr Cardio Conference Room</i></p>

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DAY 3 Saturday, November 4, 2023		
Time (Eastern Time)	Topic	Presenter(s) / Location
8:00-11:30 am (Break 10:10-10:30 am)	Interactive Labs (continued) – 1 hour per station with 20-minute break in the middle; rotate through remaining 3 stations 1. Evaluating Ventricular Arrhythmias ECGs 2. Diastolic (Dys)function In Depth 3. Echocardiographic Identification of Specific Cardiac Structures 4. Heart rate Variability/Use of Kubios 5. Cardiac Anatomy 6. Systolic dysfunction &/or 4D – Cardio office Echo Pac workstation	<i>Dr. JoAnn Slack, Widener Conference Room Dr. Annelies Decloedt, Moelis Conference Room Dr. Gunther van Loon, Cardio Exam Room Dr. Cris Navas de Solis, Woerner Amphitheater Dr. Virginia Reef, Large Exam Room Dr. Celia Marr Cardio Conference Room</i>
11:30 am-12:15 pm	Lunch	<i>Alumni Hall</i>
12:15-12:45 pm	Lecture: Recognition & Treatment of Hospitalized Horses with Acute Myocardial Injury <ul style="list-style-type: none"> Recognize patient populations at highest risk for acute myocardial infarction (AMI) Learn how to perform and interpret a focused cardiovascular assessment (rhythm, NIBP, preload and ventricular function) Understand how to monitor, treat, and prognosticate AMI 	<i>Dr. Jo Ann Slack Woerner Amphitheater</i>
12:45-1:15 pm	Lecture: The Friesian Heart <ul style="list-style-type: none"> Recognize clinical signs of aortopulmonary fistula Understand the pathological abnormalities in affected horses Learn about breeding recommendations for affected horses or relatives 	<i>Dr. Annelies Decloedt Woerner Amphitheater</i>
1:15-1:45 pm	Lecture: 4D Echocardiography <ul style="list-style-type: none"> Understand 4D echocardiography and assessments of ventricular volumes Understand use of 4D echo in endocarditis and congenital heart disease Understand value of assessing jet size with 4D echo 	<i>Dr. Celia Marr Woerner Amphitheater</i>
1:45-2:45 pm	Questions & Panel Discussion <ul style="list-style-type: none"> Discuss methods of assessing jet severity and their limitations Discuss aortic valve pathology and safety concerns with progression 	<i>All Woerner Amphitheater</i>

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