

Advanced Equine Cardiology: Delving into the Heart of the Matter
October 28-30, 2021
Penn Vet's New Bolton Center | Kennett Square, PA

| DAY 1 October 28, 2021 | | |
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| Time | Topic | Presenter(s) |
| 7:30-8:00 am | Registration | |
| 8:00-8:15 am | Welcome and Introductions | <i>Dr. Virginia Reef</i> |
| 8:15-10:15 am | <p>Interactive Presentation: Cardiac Case Discussion 4 cases (30 minutes each). Cardiac cases will be presented for discussion with the participants. Participants will have the option to evaluate these cases prior to the case discussion.</p> <ul style="list-style-type: none"> Recognize the significance of the cardiac abnormality detected and what management/treatments is/are indicated. Recognize valve pathology resulting in valvular regurgitation. Identify the arrhythmias present. | <p><i>Dr. Annelies Decloedt</i> <i>Dr. Mary Durando</i> <i>Dr. Celia Marr</i> <i>Dr. Cris Navas De Solis</i></p> |
| 10:15-10:30 am | Break | |
| 10:30-11:30 am | <p>Lecture: Measurement Techniques: M-mode, 2D and Doppler</p> <ul style="list-style-type: none"> Apply the proper techniques for 2D and M-mode images to be measured, with proper image quality, caliper placement and timing. Be familiar with the indications for Doppler, with basic interpretation. | <i>Dr. Mary Durando</i> |
| 11:30 am-12:00 pm | <p>Tissue Doppler Imaging</p> <ul style="list-style-type: none"> Apply proper techniques when performing pulsed wave and color tissue Doppler imaging for measuring atrial and ventricular myocardial velocities in horses. Recognize (potential) clinical applications of tissue Doppler imaging in equine cardiology. | <i>Dr. Annelies Decloedt</i> |
| 12:00-1:00 pm | Lunch | |

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| DAY 1 (continued) October 28, 2021 | | |
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| Time | Topic | Presenter(s) |
| 1:00-6:00 pm | <p>Echocardiography Labs – 1.25 hour per station; rotate through 4 of 6 stations</p> <p>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, and obtaining images for speckle tracking.</p> <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. | <p><i>Dr. Annelies Decloedt</i> <i>Dr. Mary Durando</i> <i>Dr. Celia Marr</i> <i>Dr. Cris Navas de Solis</i> <i>Dr. Virginia Reef</i> <i>Dr. Joann Slack</i></p> |
| 6:00 – 7:00 pm | Welcome Reception | |

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| DAY 2 October 29, 2021 | | |
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| Time | Topic | Presenter(s) |
| 8:00-10:00 am | Echocardiography Lab (continued) – 1 hour per station; rotate through remaining 2 stations | <i>All</i> |
| 10:00-10:30 am | Break | |
| 10:30-11:20 am | Lecture: Atrial Arrhythmias and Atrial Fibrillation: Diagnosis and Treatment <ul style="list-style-type: none"> • Recognize indications for cardioversion of AT and AF. • Understand how to use quinidine sulfate most effectively for pharmacologic cardioversion of AF. • Learn about TVEC and ablation. | <i>Dr. Virginia Reef</i> |
| 11:20-11:50 am | Lecture: Pharmacology of Cardiac Drugs <ul style="list-style-type: none"> • Explain the drugs useful for correction of atrial and ventricular arrhythmias. • Identify the cases where the use of an ace inhibitor would be indicated. • Recognize how to use cardiac drugs in a horse with congestive heart failure. | <i>Dr. Cris Navas de Solis</i> |
| 11:50 am-12:10 pm | Lecture: Congenital Cardiac Disease: A Systematic Approach <ul style="list-style-type: none"> • Develop a systematic echocardiographic approach to the diagnosis of congenital cardiac disease. • Identify the echocardiographic views where the membranous VSD and outflow VSD are located. • Describe the abnormalities associated with a VSD that affect prognosis. | <i>Dr. Virginia Reef</i> |
| 12:10-1:00 pm | Lunch | |
| 1:00-1:20 pm | Lecture: Speckle Tracking <ul style="list-style-type: none"> • Explain the principles of speckle-tracking echocardiographic (STE) imaging. • Appreciate how the STE exam is performed. • Be familiar with how STE has been applied in equine cardiology. • Appreciate how STE compliments other echocardiographic technologies in providing a comprehensive cardiac evaluation in equine patients. | <i>Dr. Celia Marr</i> |
| 1:20-2:20 pm | Lecture: The Conundrums of Assessing Exercising Arrhythmias <ul style="list-style-type: none"> • Develop a systematic approach to the evaluation of exercising ECGs. • Identify the different timing and morphology of exercising arrhythmias. | <i>Dr. JoAnn Slack</i> |
| 2:20-2:45 pm | Break | |

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| DAY 2 (continued) Friday, October 29, 2021 | | |
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| Time | Topic | Presenter(s) |
| 2:45-6:15 pm | <p>Interactive Labs – 1 hour per station; rotate through 3 of 6 stations</p> <ol style="list-style-type: none"> 1. Evaluating Exercising ECGs <ul style="list-style-type: none"> • Recognize the principles of color Doppler and how to effectively use it. • Explain the difference between pulsed wave, continuous wave, and tissue Doppler and when to use these. 2. Interpretation of Doppler including TDI <ul style="list-style-type: none"> • Recognize the principles of color Doppler and how to effectively use it. • Explain the difference between pulsed wave, continuous wave, and tissue Doppler and when to use these. 3. Integration of Sports Medicine & Cardiology: Case Based <ul style="list-style-type: none"> • Recognize the implications of aortic, mitral, and tricuspid regurgitation on performance. • Explain safety implications of arrhythmias in the performance horse. 4. Interpretation of Resting ECGs <ul style="list-style-type: none"> • Identify types of atrioventricular block (AVB). • Identify APCs and differentiate from marked sinus arrhythmia. • Recognize the challenges of differentiating atrial tachycardia, atrial flutter, and atrial fibrillation. 5. Interpretation of Resting ECGs – Part II <ul style="list-style-type: none"> • Identify ventricular premature complexes. • Identify multiform ventricular arrhythmias and R on T. • Differentiate idioventricular rhythm from ventricular tachycardia. 6. M-mode and 2-D Measurements <ul style="list-style-type: none"> • Obtain accurate measurements of the LV M-mode bisecting the LV, just below the mitral valve. • Obtain accurate 2D measurements of the LA diameter and area. • Obtain accurate 2D measurements of the AR and PA. | <p><i>Dr. Annelies Decloedt</i> <i>Dr. Mary Durando</i> <i>Dr. Celia Marr</i> <i>Dr. Cris Navas de Solis</i> <i>Dr. Virginia Reef</i> <i>Dr. Joann Slack</i></p> |

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| DAY 3 October 30, 2021 | | |
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| Time | Topic | Presenter(s) |
| 8:00-11:30 am | Interactive Labs (continued) – 1 hour per station; rotate through remaining 3 stations 1. Evaluating Exercising ECGs 2. Interpretation of Doppler including TDI 3. Integration of Sports Medicine & Cardiology: Case Based 4. Interpretation of Resting ECGs 5. Interpretation of Resting ECGs – Part II 6. M-mode and 2-D Measurements | <i>Dr. Annelies Decloedt</i> <i>Dr. Mary Durando</i> <i>Dr. Celia Marr</i> <i>Dr. Cris Navas de Solis</i> <i>Dr. Virginia Reef</i> <i>Dr. Joann Slack</i> |
| 11:30 am-12:15 pm | Lunch | |
| 12:15-12:45 pm | Lecture: Bradyarrhythmias: Diagnosis and Treatment <ul style="list-style-type: none"> Identify potentially pathologic patterns of second degree AV block. Differentiate third degree AV block from atrial tachycardia with second degree AV block. Recognize when pacing is indicated. | <i>Dr. JoAnn Slack</i> |
| 12:45-1:15 pm | Lecture: Evaluation of Right Heart Function <ul style="list-style-type: none"> Be familiar with how to evaluate right atrial and right ventricular size and function. Recognize (potential) clinical applications of right heart function. | <i>Dr. Annelies Decloedt</i> |
| 1:15-1:45 pm | Lecture: Echocardiography as an Aid in the Critically Ill Patient <ul style="list-style-type: none"> Implement Point of Care Ultrasound to assess the critical care patient. Describe more advanced echocardiograph techniques to assess the hemodynamically unstable patient. Identify characteristic echocardiographic patterns in the ill horse. | <i>Dr. Cris Navas de Solis</i> |
| 1:45-2:45 pm | Panel Discussion | <i>All</i> |
| 2:45 pm | Course concludes | |

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