

**DNA Deep Dive: Incorporating Genetics into Veterinary Cardiology
to Enhance Diagnosis, Prognosis, and Treatment
Live Virtual Course | Date: April 28, 2025**

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Monday, April 28, 2025		
Time (Mountain Time)	Topic	Presenter(s)
8:00-8:15 am	Welcome and Introductions	<i>Dr. Josh Stern</i>
8:15-9:15 am	<p>Myxomatous Mitral Valve Degeneration – Heritability, Breeding Practices and Our Improved Understanding of Genetic Influences</p> <ul style="list-style-type: none"> • To describe the proposed mode of inheritance of myxomatous mitral valve disease and to evaluate the implications of complex inheritance for genetic research in this disease. • To discuss the impact of different breed screening programs on myxomatous mitral valve disease severity. • To review the current evidence for genetic variants associated with myxomatous mitral valve disease and to evaluate their likely impact on disease inheritance. 	<i>Dr. Melanie Hezzell</i>
9:15-10:15 am	<p>DCM – Understanding the Role of Genetics and its Place in Breed Screening, Disease Prognostication, and Therapy</p> <ul style="list-style-type: none"> • Be able to identify currently known genetic mutations associated with dilated cardiomyopathy in dogs. • Understand the increased risks for developing clinical disease associated with genetic markers. • Recommend appropriate diagnostic evaluation and treatment options for dogs with dilated cardiomyopathy. 	<i>Dr. Ryan Fries</i>
10:15-10:30 am	Break	

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Monday, April 28, 2025 (continued)		
Time (Mountain Time)	Topic	Presenter(s)
10:30-11:30 am	<p>ARVC – Understanding the Role of Genetics from Humans to Dogs</p> <ul style="list-style-type: none"> Recall the key genetic mutations commonly linked to ARVC in humans and dogs, defining essential terms such as desmosomes, gap junctions, and pathogenic variants to establish a foundational understanding of the genetic basis of ARVC. Differentiate the phenotypic presentations of ARVC in humans and dogs using diagnostic criteria and genetic findings. Assess the value of cross-species genetic studies in advancing ARVC research, reflecting on their implications for improving diagnosis, prognosis, and treatment strategies in veterinary cardiology. 	<i>Dr. Luis Dos Santos</i>
11:30-12:30 pm	<p>Panel Discussion Canine Focus</p> <ul style="list-style-type: none"> Compare and contrast the genetic etiologies of canine cardiac disease Utilize genetic data to generate a case management plan that includes disease screening, risk stratification, and intervention. Discuss the role of genetics in breed screening practices for Boxers, Dobermans, and other at risk dog breeds. 	<p><i>Dr. Melanie Hezzell, Dr. Ryan Fries, Dr. Luis Dos Santos, Dr. Josh Stern</i></p> <p><i>Moderator: Dr. Sara Bordelon</i></p>
12:30-1:30 pm	Lunch Break	
1:30-2:30 pm	<p>HCM – Genetic Etiologies and Future Therapies</p> <ul style="list-style-type: none"> Recall the genetic variants currently understood in feline HCM; how these variants are transmitted; and their utility in prognostication and case management. Discuss novel therapies for HCM and how they capitalize on the genetic etiology of this condition across species. Provide non-directive genetic counseling for pet owners with cats that have positive genetic test results which may implicate current or future HCM status. Describe how genetic variants can physiologically result in an HCM phenotype. 	<i>Dr. Josh Stern</i>

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Monday, April 28, 2025 (continued)		
Time (Mountain Time)	Topic	Presenter(s)
2:30-3:30 pm	<p>Pharmacogenetics – Leveraging Genetic Data to Predict Drug Response</p> <ul style="list-style-type: none"> • Implement genetic testing for variants that impact a cardiac patient’s response to common drug therapies. • Provide individualized medical plans for patients with pharmacogenetic variants and cardiovascular disease that benefit the patient and maximize appropriate response to therapy. • Recognize the likely influence of yet to be describe pharmacogenetic variants in clinical practice and devise strategies to overcome these obstacles and contribute to discovery. 	<i>Dr. Josh Stern</i>
3:30-3:45 pm	Break	
3:45-5:15 pm	<p>Panel Discussion – Using Genetic Testing in Practice and Breed Screening</p> <ul style="list-style-type: none"> • Interpret HCM genetic test results and provide an example of non-directive counseling for your client. • Explain the role of genetics in drug responses and opportunities to employ genetic testing when determining the best therapeutic strategy for a patient. • Interpret genetic testing results to aid in disease prognostication 	<p><i>Dr. Steve Rosenthal, Dr. Melanie Hezzell, Dr. Ryan Fries, Dr. Luis Dos Santos, Dr. Josh Stern</i></p> <p><i>Moderator: Dr. Katie Nadolny</i></p>
5:15 pm	Close	<i>Dr. Josh Stern</i>