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# DNA Deep Dive: Incorporating Genetics into Veterinary Cardiology to Enhance Diagnosis, Prognosis, and Treatment
## On Demand

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| Agenda | | |
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| **Session Description** | **Topic** | **Presenter(s)** |
| 60 minutes | Myxomatous Mitral Valve Degeneration – Heritability, Breeding Practices and Our Improved Understanding of Genetic Influences<br>• 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.<br>• To discuss the impact of different breed screening programs on myxomatous mitral valve disease severity.<br>• To review the current evidence for genetic variants associated with myxomatous mitral valve disease and to evaluate their likely impact on disease inheritance. | *Dr. Melanie Hezzell* |
| 60 minutes | DCM – Understanding the Role of Genetics and its Place in Breed Screening, Disease Prognostication, and Therapy<br>• Be able to identify currently known genetic mutations associated with dilated cardiomyopathy in dogs.<br>• Understand the increased risks for developing clinical disease associated with genetic markers.<br>• Recommend appropriate diagnostic evaluation and treatment options for dogs with dilated cardiomyopathy. | *Dr. Ryan Fries* |

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| 60 minutes | ARVC – Understanding the Role of Genetics from Humans to Dogs<br>• 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.<br>• Differentiate the phenotypic presentations of ARVC in humans and dogs using diagnostic criteria and genetic findings.<br>• 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. | *Dr. Luis Dos Santos* |
| 60 minutes | Panel Discussion Canine Focus<br>• Compare and contrast the genetic etiologies of canine cardiac disease<br>• Utilize genetic data to generate a case management plan that includes disease screening, risk stratification, and intervention.<br>• Discuss the role of genetics in breed screening practices for Boxers, Dobermans, and other at risk dog breeds. | *Dr. Melanie Hezzell,*<br>*Dr. Ryan Fries,*<br>*Dr. Luis Dos Santos,*<br>*Dr. Josh Stern*<br><br>*Moderator: Dr. Sara Bordelon* |
| 60 minutes | HCM – Genetic Etiologies and Future Therapies<br>• Recall the genetic variants currently understood in feline HCM; how these variants are transmitted; and their utility in prognostication and case management.<br>• Discuss novel therapies for HCM and how they capitalize on the genetic etiology of this condition across species.<br>• Provide non-directive genetic counseling for pet owners with cats that have positive genetic test results which may implicate current or future HCM status.<br>• Describe how genetic variants can physiologically result in an HCM phenotype. | *Dr. Josh Stern* |

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| **Session Description** | **Topic** | **Presenter(s)** |
| 60 minutes | Pharmacogenetics – Leveraging Genetic Data to Predict Drug Response<br>• Implement genetic testing for variants that impact a cardiac patient's response to common drug therapies.<br>• Provide individualized medical plans for patients with pharmacogenetic variants and cardiovascular disease that benefit the patient and maximize appropriate response to therapy.<br>• 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. | *Dr. Josh Stern* |
| 90 minutes | Panel Discussion – Using Genetic Testing in Practice and Breed Screening<br>• Interpret HCM genetic test results and provide an example of non-directive counseling for your client.<br>• Explain the role of genetics in drug responses and opportunities to employ genetic testing when determining the best therapeutic strategy for a patient.<br>• Interpret genetic testing results to aid in disease prognostication | *Dr. Steve Rosenthal,*<br>*Dr. Melanie Hezzell,*<br>*Dr. Ryan Fries,*<br>*Dr. Luis Dos Santos,*<br>*Dr. Josh Stern*<br><br>*Moderator: Dr. Katie Nadolny* |