

# Genetics and Genomics (G2) Seminar Series



**INSTITUTE FOR GENOME  
SCIENCES AND SOCIETY**  
TEXAS A&M UNIVERSITY

The Interdisciplinary Faculty of Genetics  
Genetics Graduate Student Association



## Everyone in the World is My Friend: The Genetic Architecture of a Hyper-Social Canid

**Dr. Bridgett M. vonHoldt**

**Department of Molecular Biology  
Princeton University**

Although considerable progress has been made in understanding the genetic basis of morphologic traits in dogs and wolves, the genetic basis of their behavioral divergence is poorly understood. I will discuss our study where we used an approach that integrated behavioral and genetic data in an exploration of the molecular underpinnings of hypersocial behavior, a trait central to the domestication process. We resequenced a 5-Mb region on chromosome 6 previously found to be under positive selection in domestic dogs. We find that this region houses a large-scale deletion that causes Williams-Beuren syndrome (WBS) in humans, a multi-system congenital disorder characterized by hypersocial behavior. We find that hypersociability is associated with structural variation in three genes, all of which have been linked to WBS. This finding suggests that there are commonalities in the genetic architecture of WBS and canine tameness. Moreover, directional selection may have targeted these behavioral genetic variants, which promoted rapid behavioral divergence of dogs from wolves and facilitated coexistence with humans.



**Host: Dr. Bill Murphy**  
[WMurphy@cvm.tamu.edu](mailto:WMurphy@cvm.tamu.edu)

**EBB Coordinator:**  
**Dr. Jason Martina**  
[jpmartina@tamu.edu](mailto:jpmartina@tamu.edu)

**Monday, April 23, 2018**

**3:30 p.m.**

**HFSB 104**

Seminar co-hosted with the Ecology &  
Evolutionary Biology (EEB) Seminar Series

Genetics

Texas A&M Institute for Genome  
Sciences and Society (TIGSS)