

BioFrontiers - Biology Seminar

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Zoom Meeting: <https://unt.zoom.us/j/98067606539>



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Navigating the course of infection – The impact of host & tick-borne oxidants on *Borrelia burgdorferi* infectivity

The Lyme disease spirochete *Borrelia burgdorferi* must sense and respond to a multitude of environmental changes throughout its enzootic cycle. While much is known about the changes in gene expression that occur in *B. burgdorferi* during infection of mammalian hosts and its tick vector *Ixodes scapularis*, the mechanisms underlying how these transcriptomic changes occur remain ambiguous. Previously, we have shown *B. burgdorferi* encounters substantial amounts of reactive oxygen species (ROS) and reactive nitrogen species (RNS) during infection of *I. scapularis*. Recent work from our laboratory suggest ROS and RNS are key environmental signals sensed by *B. burgdorferi* resulting in the increased expression of genes involved in tick colonization and decreased expression of genes required for infection of mammalian hosts. Currently, we are investigating the mechanisms underlying redox sensing in *B. burgdorferi* that drive the changes in gene expression that promote infection of *I. scapularis*.

