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Pathogenesis-related features of Borrelia burgdorferi

Jon Skare is Professor and Associate Head of the Department of Microbial Pathogenesis and Immunology in the College of Medicine at Texas A&M University. His research program has been funded continuously by the National Institute of Health since 1999 . Dr. Skare has trained
over 40 students in his research group during his time at Texas A&M and several of his postdoctoral trainees and students have gone on to hold academic positions.

Specifically, the Skare lab is interested in spirochetal infections, particularly *Borrelia burgdorferi*, the etiologic agent of Lyme disease. The long-term interests of his research group are centered on understanding how B. burgdorferi promotes its pathogenic potential and persists in the disparatehosts it occupies in nature (e.g., both ticks and mammals). In this regard, the research program is aligned with: (i) regulatory pathways that contribute to the establishment of infection during the arthropod to mammalian transition; (ii) characterizing the response to oxidative stressors in *B. burgdorferi* and the regulation thereof; (iii) identifying and characterizing surface structures that contribute to the colonization and maintenance of infection via adherence mechanisms; and (iv) the ability of *B.*

burgdorferi and relapsing fever *Borrelia* to persistently infect hosts in the face of
a potent innate and adaptive immune response.

Conference Lecture Summary

In this presentation, Dr. Jon Skare will present a background of Lyme borreliosis as well as a discussion of some of the limitations and challenges that are currently under investigation from the basic science perspective. He will also present some of the work being done in his research group to evaluate how *B. burgdorferi* carries out it pathogenic potential at the molecular level.