LORENZO GIACANI, PHD
Associate Professor
Department of Medicine, Division of Allergy & Infectious Diseases
Adjunct Professor
Department of Global Health

During syphilis infection, T. pallidum replication within early lesions triggers a strong inflammatory response that attracts macrophages, lymphocytes and plasma cells to the site of infection. Following the appearance of an adaptive host immune response, the majority of T. pallidum cells are cleared by opsonophagocytosis, and lesions spontaneously resolve, leading to the asymptomatic stage of the disease known as latency. Despite the host's efficient eradication, a few T. pallidum cells avoid immune clearance and persist in the host. In absence of treatment, this smoldering persistence can cause recrudescence of early symptoms or, after prolonged latency, can trigger disease reactivation and progression to its tertiary stage, characterized by manifestations such as gummatous disease, cardiovascular syphilis, general paresis or tabes dorsalis.

My work at the University of Washington focuses on the study of the pathogenesis of syphilis, and in particular, on the role of transcriptional regulation in T. pallidum in inducing phenotypic modifications that help the pathogen counteract the host defenses and persist in the face of a robust immune response. Additionally I use comparative genomics to identify T. pallidum genes that could be useful to devise new strain typing methods or polymorphic genes that could be involved in immune evasion and persistence. Another focus of my work is vaccine development. I am currently studying a novel putative outer membrane protein (OMP) of T. pallidum (named Tp0126) which is predicted to be T. pallidum OmpW homolog, to assess its ability to confer protective immunity against syphilis.

https://aid.uw.edu/faculty/lorenzo-giacani-phd