Subject: Thesis Defense: Timothy Boos, MS in Biology
Date: Thursday, June 18, 2026 at 1:20:11 PM Eastern Daylight Time
From: SSB Faculty List on behalf of Diane St. Germain
To: SSB-FACULTY-LIST-L@LISTSERV.GMU.EDU

Thesis Defense Announcement
To: The George Mason University Community

Candidate: Timothy Boos

Program: M.S. in Biology

Date: July 7, 2026

Time: 9:00 a.m.

Location: In Person, IABR Conference room #1004, Science & Tech Campus, Manassas VA 20110
and via Zoom
Join Zoom Meeting:
https://gmu.zoom.us/j/97258430403?pwd=9dRji4JdFF99ptZsN7Xa3xyu2qY8Dh.1

Meeting ID: 972 5843 0403
Passcode: 875366
One tap mobile
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Committee Chair: Dr. Alessandra Luchini

Committee members: Dr. Lance Liotta, Dr. Iosif Vaisman

Title: Investigation of Post-Treatment Lyme Disease Patients via Integrated Proteomic Analysis of BEV-exposed Immune Cells

Abstract:
Lyme disease (LD) is an infection caused by the Borrelia genus of spirochetes, transmitted by the bite of the tick genus Ixodes. Symptoms of LD range from a simple skin rash to fatigue, cognitive impairment, arthritic conditions, neurological dysfunction, and cardiological dysregulation. If LD is caught early enough, a simple regiment of antibiotics is prescribed, and most patients will recover without any further issues. In a subset of these patients, symptoms will persist despite treatment. These patients are referred to as having Post Treatment Lyme Disease Syndrome (PTLDS). In these cases, symptoms can last for years after infection. Currently, there is no treatment for PTLDS, as B. burgdorferi is not detectable in the patient using available methodologies, and the mechanistic cause of these symptoms is not yet known. This study compares proteins from human immune cell responses in vitro with proteins found in the urine of patients with significant PTLDS. Our goal is to integrate in vitro cellular data with in vivo clinical observations to identify potential biomarkers, treatment options, or other insights for patients of PTLDS.

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