Subject: Thesis Defense - Melissa Friedman, MS in Biology
Date: Tuesday, April 7, 2026 at 2:35:09 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: Melissa Friedman

Program: M.S. in Biology

Date: April 17, 2026

Time: 4:00 PM Eastern Time (US and Canada)

Location: Via Zoom
Join Zoom Meeting
https://gmu.zoom.us/j/98079480138?pwd=3lA1BHOPb5RVa19R6pa7KaGNbQShbE.1

Meeting ID: 980 7948 0138
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Dial by your location
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Meeting ID: 980 7948 0138
Passcode: 865918
Find your local number: https://gmu.zoom.us/u/acyrxt37F

Committee Chair: Dr. Alessandra Luchini

Committee Members: Dr. Lance Liotta, Dr. Ancha Baranova

Title: Function and Integrity of the Blood-Brain Barrier: Implications for Vector-Borne Diseases

Abstract:

The blood-brain barrier is essential to regulating the influx and efflux of biological substances between the blood and the brain. BBB is a highly selective and permeable structure composed of a basement membrane, endothelial cells, pericytes, and astrocyte end feet, protecting the brain from unwanted toxins and molecules while allowing essential nutrients to pass. Vector-borne diseases commonly spread to the central nervous system, presenting an array of neurological consequences. This study explores the mechanisms of how various pathogens cross the BBB and infect the CNS. This study analyzes cellular and molecular components of BBB which facilitate the dissemination of disease-causing pathogens. Here we looked at whether neurological conditions arising from vector-borne disease are due to induced or existing permeability of the BBB, or if a pathogen is able to cross an intact BBB. We hope to provide valuable insights informing the development of potential therapeutics capable of mitigation of infection sequelae or preventing the development of neurological conditions.

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