Subject: Thesis Defense - Una Miagkov, MS Biology
Date: Monday, August 17, 2026 at 9:38:14 AM 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: Una Miagkov

Program: M.S. in Biology

Date: September 2, 2026

Time: 1:00 PM Eastern Time (US and Canada)

Location:
Join Zoom Meeting
https://gmu.zoom.us/j/94732458156?pwd=SZVR0cFEbUtY2GA143WZLYaj5hizPV.1

Meeting ID: 947 3245 8156
Passcode: 602767
One tap mobile
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+14805624901 US
Meeting ID: 947 3245 8156
Passcode: 602767
Find your local number: https://gmu.zoom.us/u/acI5rhM0FQ

Committee Chair: Dr. Ancha Baranova

Committee members: Dr. Iosif Vaisman, Dr. Melanie Rutkowski

Title: TLR5 Polymorphism and Its Relationship to Severity and

Presentation in Atherosclerosis Patients

Abstract:

Atherosclerosis, which is a disease characterized by the formation of plaques within arteries in the body, is considered to be the leading cause of cardiovascular disease (CVD), as well as recent work suggests that this disease is a complex disorder in which dysregulated immune response may play a significant role in development and progression. TLR5, or Toll-like receptor 5, has been shown to have its only known ligand be bacterial flagellin, and signaling of TLR5 has been previously shown to play a role in immune modulation and play a role in other diseases such as ovarian cancer and Crohn's disease. This projects seeks to work with a clinical dataset in partnership with immunoPrecision Medicine (iPRIME) to employ RT-qPCR methodology to genotype a patient cohort for TLR5 R392X and TLR5 Q181K polymorphism, which are hypothesized to be associated with downregulation of TLR5 signaling, and multiple variable analysis to analyze disease progression in a de-identified clinical cohort, as well as analyze patient plasma samples for levels of systemic flagellin and presence of immune parameters. This was done in order to evaluate the relationship between TLR5 R392X and TLR5 Q181K polymorphism, the latter of which is not well understood, and atherosclerosis progression and incidence, associate incidence and patient parameters from a de-identified clinical cohort, as well as quantify immune response and inflammation. Additionally, this data was used to better define the functional significance and relationship between TLR5 polymorphisms R392X and Q181K within a clinical cohort, as well as the role of TLR5 signaling.

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