Subject: Thesis Defense: Thomas Lopez, MS Biology
Date: Thursday, March 26, 2026 at 10:00:15 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: Thomas Lopez

Program: M.S. in Biology

Date: April 10, 2026

Time: 11:00 AM Eastern Time (US and Canada)

Location: Exploratory Hall, Room L111, Fairfax campus

and via Zoom

Join Zoom Meeting
https://gmu.zoom.us/j/93515148383?pwd=zZTz6gzbNLCOhcBcs97j1q3bLt8S19.1

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Committee Chair: Dr. Daniel Hanley

Committee members: Dr. Rebecca Forkner, Dr. Ancha Baranova

Title: Crypsis in the Sphingid Caterpillar *Amphion floridensis*

Abstract: Background selection is a behavioral strategy in which camouflaged animals navigate their environment based on their own appearance, often positioning themselves against substrates of similar colors. This improves their camouflage, which further reduces the risk of being seen by predators. Here we investigate camouflage and background selection in the color-changing Nessus sphinx moth caterpillar (*Amphion floridensis*). This species shifts from green to brown coloration, with some individual expressing an intermediate pink phase. We confirm that these colors are distinct to their natural avian predators and, therefore, a caterpillar's ability to remain hidden against different host plant colors shifts over time. We use a dichotomous-choice test to determine whether, and how, caterpillars adjust their behavior to maintain camouflage as their color changes. We found that caterpillars preferentially move across background colors which maximize their current camouflage, choosing green model leaves while green and preferring brown model leaves when brown. Interestingly, pink caterpillars did not prefer either color. These findings provide strong evidence that background selection in Nessus sphinx caterpillars is plastic, allowing them to maintain crypsis over their ontogeny.

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