



## Speaker:

Julian Rowe Dupuis, PhD

Associate Professor  
Department of Entomology, University of Kentucky

**Date:** Monday, March 30, 2026

**Time:** 4:00 pm - 4:50 pm

**Format:** In-Person Seminar & Virtual Access

**Location:** Genomics Auditorium 1102A

**Zoom:** 943 6687 2379

**Passcode:** 453393

## Title:

“Tracing trespassing tephritids with tailored genomic tools”

## Abstract:

Genome-wide data sets have revolutionized both evolutionary understanding of invasion dynamics and facilitated creation of tools to aid in control of invasive pests. For recurrently invading insect pests, these tools often take the form of panels of diagnostic markers for specific regulatory questions (species/strain identification, geographic source determination, etc.), which are gleaned from larger genomic datasets. Although numerous studies have developed such diagnostic panels, few assess the efficacy of different population genomic strategies in identifying diagnostic markers, and how to reduce large genomic datasets most effectively to a minimum set of highly informative markers. Here, I will discuss ongoing work in developing diagnostic tools for invasive true fruit flies (Diptera: Tephritidae) from multiple genomic data types with the ultimate goals of understanding the systematics and evolutionary dynamics of these groups, delimiting pest from non-pest species, facilitating geographic source determination of intercepted flies, and delimiting strains of flies used for Sterile Insect Technique. Additionally, I will highlight bioinformatic tools we have developed to aid in identification and validation of diagnostic markers. These approaches leverage genome-scale data to inform the evolutionary dynamics of diverse insect groups as well as provide sought-after tools for regulating these detrimental pests.

*Refreshments will be served in the Entomology Building Courtyard at 3:30pm*