JACOB WITTMAN

PROJECTS

2021 | 2018

Estimating the range of attraction of a sex-pheromone used in traps to detect emerald ash borer

University of Minnesota — Saint Paul, MN

- Applied a novel trapping arrangement in conjunction with a non-linear Bayesian regression to elucidate the range of attraction of a sex-pheromone used to trap emerald ash borer
- Determined that the sex-pheromone is likely attractive at a range of 90 feet
- The range of attraction is used by managers internationally to develop efficient early-detection trap networks

2021 | 2019

Evaluating anisotropy in the spread of emerald ash borer

University of Minnesota — Saint Paul, MN

- Used generalized additive models and simultaneous autoregressive models to model the spread of emerald ash borer across North America
- Model predictions will be used by managers in North America to assess when emerald ash borer will spread to their communities and plan management tactics accordingly

2020 | 2018

Forecasting overwintering mortality of a biological control agent in North America

University of Minnesota — Saint Paul, MN

- Designed experiments to assess the cold tolerance of a parasitic wasp used to control populations of emerald ash bor
- Forecast overwintering survival of this parasitic wasp across the USA and Canada using generalized estimating equations

2018 | 2016

Determining the efficacy of regulatory requirements on limiting the spread of *Lymantria dispar*

University of Minnesota — Saint Paul, MN

- Developed experiments to determine the efficacy of regulatory requirements in lumber yards designed to reduce the spread of the invasive moth *Lymantria dispar*.
- Using generalized linear models and Monte Carlo simulation, showed that current regulatory requirements were likely sufficient to reduce inadvertent movement of this insect.

EDUCATION

Current | 2018

PhD., Entomology (graduate minor Biostatistics)

University of Minnesota — Saint Paul, MN

2018 | 2016

M.S., Entomology

University of Minnesota — Saint Paul, MN

2012 | 2008

B.S., Biology, Environmental Studies (minor Secondary Education)

Luther College — Decorah, IA

I am a quantiative invasion entomologist specializing in biostatistics/data science, invasion biology, and teaching. I am seeking to leverage my experience managing complex ecoloogical projects, analyzing data, and communicating results to a wide variety of collaborators to find a role as a data scientist.

CONTACT

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(319)-214-3317

SKILLS

Expert in communicating technical material to non-technical audiences

Expert in R and R Studio

GitHub/git

HPC with R

Relational Databases

Some Python and SQL

*Made with the R package **pagedown**.*

The source code is available on github.com/nstrayer/cv.

Last updated on 2021-11-10.

PUBLICATIONS

2021 — **Forecasting overwintering mortality of *Spathius galinae* in North America**
Biological Control
J. Wittman, B. Aukema, J. Duan, and R. Venette

2021 — **Optimizing early detection strategies: defining the effective attraction radius of attractants for emerald ash borer *Agrilus planipennis* Fairmaire**
Agricultural and Forest Entomology
J. Wittman, P. Silk, K. Parker, and B. Aukema

2020 — **A guide and toolbox to replicability and open science in entomology.**
Journal of Insect Science
J. Wittman and B. Aukema

2019 — **Foliage type and deprivation alters the movement behavior of late instar European gypsy moth *Lymantria dispar* (Lepidoptera: Erebidae)**
Journal of Insect Behavior
J. Wittman and B. Aukema

2019 — **Characterizing and simulating the movement of late-instar gypsy moth (Lepidoptera: Erebidae) to evaluate the effectiveness of regulatory practices**
Environmental Entomology
J. Wittman, R. Nicoll, S. Myers, P. Chaloux, and B. Aukema

These are a selection of first-authored publications. For a complete list of publications, presentations, and posters please visit my full CV at my Google Scholar Profile.

TEACHING EXPERIENCE

Current | 2019 — **Private R and Statistics Tutor**
Online — Wyzant Tutoring

2020 — **Spatial and Temporal Analyses (ENT 5126)**
University of Minnesota — Saint Paul, MN

2018 — **Insect Biology (ENT 1005)**
University of Minnesota — Saint Paul, MN

2016 | 2014 — **Science Teacher (7 - 12 grade)**
DREAM Technical Academy — Willmar, MN

Both learning and teaching are life-long skills that can be employed in any position. I am passionate about learning from and teaching others.