

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 borer.
- 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
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2018

PhD., Entomology (graduate minor Biostatistics)

University of Minnesota

📍 Saint Paul, MN

2018
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2016

M.S., Entomology

University of Minnesota

📍 Saint Paul, MN

2012
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2008

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

Luther College

📍 Decorah, IA

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

CONTACT

✉ wittja01@gmail.com

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🐙 github.com/wittja01

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📞 (319)-214-3317

SKILLS

Supervised and unsupervised machine learning

Statistics and inference

Communicating technical material to non-technical audiences

R and R Studio

Data Visualization (R and Shiny)

git & GitHub

HPC with R

Relational Databases

Basic Python and SQL

Made with the R package
[pagedown](https://github.com/jgm/pagedown).

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

Last updated on 2021-11-17.



PUBLICATIONS

- 2021 ● **Forecasting overwintering mortality of *Spathius galinae* in North America**
Biological Control 160: 104694
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 23(4): 527 – 535.
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 20(3): 1 – 9.
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 32(1): 25 – 37.
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 48(3): 496 - 606.
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](#).



SELECTED TEACHING EXPERIENCE

- Current
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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
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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.