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 | 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 ecological 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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wittja01
github.com/wittja01
linkedin.com/in/wittja01
(319)-214-3317

SKILLS

- 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

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 | 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.