

# Brian J. Spiesman, PhD

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## Education

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PhD, Biological Science, Florida State University, Advisor: Brian D. Inouye 2012  
MS, Wildlife Ecology & Conservation, University of Florida, Advisor: Graeme S. Cumming 2006  
BS, Biology, Portland State University 1999

## Research and Teaching Experience

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Research Assistant Professor 2018 – Present  
Kansas State University, Department of Entomology  
*Manhattan, KS*

Postdoctoral Research Associate 2017 – 2018  
Temple University, Department of Biology  
*Philadelphia, PA*

Postdoctoral Research Associate 2013 – 2017  
University of Wisconsin – Madison, Department of Entomology  
*Madison, WI*

Graduate Teaching/Research Assistant 2006 – 2012  
Florida State University, Department of Biological Science  
*Tallahassee, FL*

Graduate Research Assistant 2003 – 2006  
University of Florida, Dept. Wildlife Ecology & Conservation  
*Gainesville, FL*

## Publications

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- Spiesman, BJ**, A Bennett, R Isaacs, and C Gratton. *In Press*. Harvesting effects on bee communities in bioenergy grasslands depend on nesting guild. ***Ecological Applications***.
- Spiesman, BJ**, AP Stapper, and BD Inouye. 2018. Patch size, isolation, and matrix quality effects on biodiversity and ecosystem functioning in a landscape microcosm. ***Ecosphere*** 9:e02173.
- Spiesman, BJ**, H Kummel, and RD Jackson. 2018. Carbon storage potential increases with increasing ratio of C<sub>4</sub> to C<sub>3</sub> grass cover and soil productivity in restored tallgrass prairies. ***Oecologia*** 186:565-576.
- Spiesman, BJ**, A Bennett, R Isaacs, and C Gratton. 2017. Bumble bee colony growth and reproduction depend on local flower dominance and natural habitat area in the surrounding landscape. ***Biological Conservation*** 206:217-223.

**Spiesman, BJ** and C Gratton. 2016. Flexible foraging shapes the topology of plant-pollinator interaction networks. *Ecology* 97:4131-4144.

\*Wenninger, A, TN Kim, **BJ Spiesman**, and C Gratton. 2016. Contrasting foraging patterns: testing resource-concentration and dilution effects with pollinators and seed predators. *Insects* 7:23.

Kim, TN, **BJ Spiesman**, AL Buchanan, AS Hakes, S Halpern, BD Inouye, A Kilanowski, N Kortessis, DW McNutt, AC Merwin, and N Underwood. 2015. Selective manipulation of a non-dominant plant and its herbivores influences an old-field plant community. *Plant Ecology* 216:2029-2045.

**Spiesman, BJ** and BD Inouye. 2015. The consequences of multiple indirect pathways of interaction for species coexistence. *Theoretical Ecology* 8:225-232.

Bartrons, M, C Gratton, **BJ Spiesman**, MJ Vander Zanden. 2015. Taking the trophic bypass: Aquatic-terrestrial linkage reduces methylmercury in a terrestrial food web. *Ecological Applications* 25:151-159.

**Spiesman, BJ** and BD Inouye. 2013. Habitat loss alters the architecture of plant-pollinator interaction networks. *Ecology* 94:2688-2696.

**Spiesman, BJ** and GS Cumming. 2008. Communities in context: The influences of multiscale environmental variation on local ant community structure. *Landscape Ecology* 23:313-325.

Cumming, GS and **BJ Spiesman**. 2006. Regional problems need integrated solutions: pest management and conservation biology in agroecosystems. *Biological Conservation* 131:533-543.

\*Undergraduate-led project

## Manuscripts in progress

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**Spiesman, BJ**, D Duncan, and RD Jackson. Switchgrass fertilization increases nitrous oxide emissions with little benefit to yield: implications for sustainable bioenergy production. *In prep.*

**Spiesman, BJ** and C Gratton. Temporal continuity and resource complementarity at a landscape scale: modeling consequences for predators and their prey. *In prep.*

\*Bartel, S, TN Kim, **BJ Spiesman** and C Gratton. Body size distributions of ants and bees in mixed-prairie grasslands. *In prep.*

## Grants

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2018 US Department of Agriculture, Natural Resources Conservation Service, Conservation Innovation Grant. "Living on the Edge: Determining the Potential of Multipurpose Perennial Crops as Habitat for Native Pollinators and Natural Enemies". **\$49,997**

2017 US Department of Agriculture NIFA/AFRI. "Does Resource Continuity at a Landscape Scale Affect Natural Enemies and Biological Control?". **\$455,000**

2013 US Department of Agriculture, Natural Resources Conservation Service, Conservation Innovation Grant. "Integrating Pollinators into Energy Crops". **\$89,167**

2011 National Science Foundation, Doctoral Dissertation Improvement Grant. "*Effects of matrix habitat on metacommunity dynamics and ecosystem function*". **\$14,550**

2010 Robert K. Godfrey Endowment Award for the Study of Botany **\$1000**

2009 Florida State University Graduate School Dissertation Research Grant **\$750**

2008 Florida State University CRC-COFRS. "*Effects of landscape structure on local ecological communities*". **\$13,000**

2006-2012 Florida State University travel grants **\$2750**

2005 Tropical Conservation and Development Field Research Grant **\$500**

2003-2006 University of Florida travel grants **\$420**

## Presentations

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**Spiesman, BJ.** 2019. Grassland management for pollinators and bioenergy production. *Invited talk* at the Society for Range Management Annual Meeting.

**Spiesman, BJ.** 2018. Pollinators in grasslands and pine savannahs: how disturbance impacts diversity and plant-pollinator interactions. *Invited talk* at Kansas State University, Department of Entomology.

**Spiesman, BJ,** T Kim, and C Gratton. 2018. Temporal variability and complementarity of resources in the landscape: consequences for predators and their prey. Poster at the Entomological Society of America Annual Meeting.

Kim, TN, **BJ Spiesman,** Y Bukhman, M Jusino, and C Gratton. 2018. Using next generation sequencing to determine predator-prey associations. Poster at the Entomological Society of America Annual Meeting.

**Spiesman, BJ** and C Gratton. 2017. Landscape-scale resource continuity for populations and biocontrol. *Invited talk* at the Entomological Society of America Annual Meeting.

Kim, TN, **BJ Spiesman,** Y Bukhman, M Jusino, and C Gratton. 2017. Gut-content analysis: Using next-generation sequencing to detect insect prey items in ladybird beetles. Poster at the Gordon Research Conference on Plant-Herbivore Interactions.

**Spiesman, BJ.** 2016. The consequences of flexible foraging for plant-pollinator communities: a network approach. *Invited talk* at the University of California, Riverside, Department of Entomology.

**Spiesman, BJ,** T Meehan, and C Gratton. 2016. Ecosystem multifunctionality under alternative bioenergy land use scenarios. Poster at the Great Lakes Bioenergy Research Center Area 4 Retreat.

**Spiesman, BJ,** A Bennett, R Isaacs, and C Gratton. 2015. Understanding community- and colony-level bee responses to resource availability in agricultural landscapes. *Invited talk* at the Entomological Society of America Annual Meeting.

Gratton, C, **BJ Spiesman,** and TN Kim. 2015. Dynamic resource landscapes: how landscape-scale spatial and temporal variation in resource availability affects predator insects and biocontrol. *Invited talk* at the Entomological Society of America Annual Meeting.

- Spiesman, BJ**, and C Gratton. 2015. Flexible foraging shapes realized plant-pollinator network topology. Contributed talk at the Ecological Society of America 100<sup>th</sup> Annual Meeting.
- Spiesman, BJ**. 2015. Understanding the drivers of plant-pollinator network assembly: from flexible foraging to habitat loss. *Invited talk* at the University of Wisconsin – Madison Dept. of Entomology Seminar.
- Spiesman, BJ**, TN Kim, H Liere, TD Meehan, and C Gratton. 2014. Investigating the effects of production-scale harvesting on pollination and biocontrol services in bioenergy grasslands. *Invited talk* at the Ecological Society of America 99<sup>th</sup> Annual Meeting.
- Spiesman, BJ** and C Gratton. 2014. Pollinator response to harvesting and local resources in bioenergy grasslands. Poster at the Entomological Society of America Annual Meeting.
- Spiesman, BJ** and H Gaines-Day. 2013. Insect biodiversity and ecosystem services in Wisconsin grasslands. *Invited talk* at the Great Lakes Bioenergy Research Center Teaching Workshop.
- Spiesman, BJ** and BD Inouye. 2012. Matrix quality mediates the effects of patch size and arrangement on metacommunity structure and ecosystem function. Contributed talk at the Ecological Society of America 97<sup>th</sup> Annual Meeting.
- Spiesman, BJ**. 2012. Understanding the effects of landscape context on plant-pollinator interaction networks. *Invited talk* at the Florida State University Ecology and Evolution Symposium.
- Kim, TN, **BJ Spiesman**, AL Buchanan, AS Hakes, S Halpern, BD Inouye, A Kilanowski, N Kortessis, DW McNutt, AC Merwin, and N Underwood. 2012. Selective removal of insect herbivores from one plant species influences an old-field plant community. Poster at the Ecological Society of America 97<sup>th</sup> Annual Meeting.
- Spiesman, BJ** and BD Inouye. 2011. Effects of landscape context on plant-pollinator interaction networks. Contributed talk at the Ecological Society of America 96<sup>th</sup> Annual Meeting.
- Spiesman, BJ** and BD Inouye. 2011. Habitat loss reduces nestedness and increases modularity in plant-pollinator interaction networks. Poster at the European Ecological Federation Annual Meeting.
- Spiesman, BJ** and BD Inouye. 2010. Resource- and predator-mediated apparent competition in a mutualistic interaction web. Poster at the Ecological Society of America 95<sup>th</sup> Annual Meeting.
- Spiesman, BJ** and BD Inouye. 2009. Indirect interactions in a simple mutualistic interaction web. Poster at the Southeastern Evolution and Ecology Conference.
- Spiesman, BJ** and GS Cumming. 2007. Multiscale influences on local ant community structure. Poster at the Ecological Society of America 92<sup>nd</sup> Annual Meeting.
- Spiesman, BJ**. 2006. Ant community response to variation in plant community and landscape structure in the northern karstic region of Puerto Rico. Poster at the University of Florida Conference on Tropical Conservation and Development.

## Teaching and Mentoring

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University of Wisconsin – Madison, Department of Entomology

- ENT 450/451 Basic and Applied Insect Ecology (guest lecturer)

Madison, WI

2013

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| Great Lakes Bioenergy Research Center K-12 Teaching Workshop             | <i>Madison, WI</i>       |
| • Science and entomology workshop involving lecture, field, and lab work | 2013                     |
| Florida State University, Department of Biological Science               | <i>Tallahassee, FL</i>   |
| • BSC 3052 Conservation Biology (TA)                                     | 2006 – 2012              |
| • BSC 2010 Introductory Biology Lab for Majors (TA)                      |                          |
| • BSC 2011 Animal Diversity Lab for Majors (TA)                          |                          |
| • PCB 3043 General Ecology (TA)  |                          |
| • PCB 3043 General Ecology (guest lecturer)                              |                          |
| • BSC 4933 Biogeography (TA)   |                          |
| Center for Agriculture, Science, and Environmental Education             | <i>Battle Ground, WA</i> |
| • High school environmental education                                    | 1999 – 2000              |

*Graduate Student Mentoring:*

Grace Craigie (PhD), Stephen Losey (PhD), Matt Hamblin (PhD)

*Undergraduate Mentoring:*

Caleb Bezina (Kansas State University) 2018. Resource amount and diversity effects on bean beetle survivorship.

Savannah Bartel (University of Wisconsin – Madison) 2017. Disturbance alters body size distributions of grassland ants and bees.

Ian McCririe (University of Wisconsin – Madison) 2016. The effects of biomass harvesting on grassland bee communities.

Alexandria Wenninger (University of Wisconsin – Madison) 2014. Contrasting foraging patterns: testing resource-concentration and dilution effects with pollinators and seed predators.

Caitlin Bergstrom (University of Wisconsin – Madison) 2013. The effects of grassland harvesting on the abundances of two ant species, *Formica montana* and *F. creightoni*.

Sophie Hyson (Barnard College) 2011. Predator effects on pollinator visitation across a gradient of visitor abundance and diversity.

Cynthia Vasquez (Florida State University) 2009. Effects of landscape structure on Puerto Rican ant populations.

## **Professional Service**

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*Journal reviews for:*

Applied Energy, Basic and Applied Ecology, Burleigh Dodds Scientific Publishing, Ecological Entomology, Ecology, Ecology Letters, Frontiers in Ecology and the Environment, Global Ecological Change, Journal of Applied Ecology, Journal of Biogeography, Landscape Ecology, Oikos

*Funding agency proposal reviews for:*

National Science Foundation, Dimensions of Biodiversity  
 Leopold Center for Sustainable Agriculture Ecology Initiative  
 Netherlands Organisation for Scientific Research (NWO)

*Professional Societies:*

Wisconsin Ecology (Executive Committee Member), Ecological Society of America, Entomological Society of America

## Awards

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Robert K. Godfrey award for the study of botany	2010
Poster competition award, Southeastern Evolution and Ecology Conference	2009
Poster competition award, University of Florida Tropical Conservation & Development	2005

## Professional References

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**Dr. Claudio Gratton** – Postdoc advisor

Professor, Department of Entomology, University of Wisconsin – Madison  
cgratton@wisc.edu | (608) 265-3762

**Dr. Randy Jackson** – Postdoc advisor

Professor, Department of Agronomy, University of Wisconsin – Madison  
rdjackson@wisc.edu | (608) 219-5699

**Dr. Brian D. Inouye** – PhD committee chair

Professor, Department of Biological Science, Florida State University  
binouye@bio.fsu.edu | (850) 644-5605

**Dr. Nora Underwood** – PhD committee member

Professor, Department of Biological Science, Florida State University  
nunderwood@bio.fsu.edu | (850) 644-4167

**Dr. Rufus Isaacs** – Colleague

Professor, Department of Entomology, Michigan State University  
isaacsr@msu.edu | (517) 355-6619