**Karin T. Burghardt**

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Alexandria, VA 22301 phone: (302) 299-0332

**EDUCATION**

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| --- | --- |
| 2016 | Yale University, New Haven, Ph.D. (Ecology and Evolutionary Biology)Advisor: Dr. Oswald J. SchmitzDissertation: “Linking phenotypic variation in plant anti-herbivore defense to spatial variation in insect populations and soil nutrient pools” |
| 2013 | Yale University, New Haven, M.Sc (Ecology and Evolutionary Biology) |
| 2007 | University of Delaware, Newark, Honors B.Sc with Distinction, Magna cum laude Major: Wildlife Conservation (Dean’s Scholar Interdisciplinary Program)Thesis: “Trophic Dynamics and Native Plants in a Suburban Landscape”  |

**PUBLICATIONS**

7. **Burghardt, K. T**. Nutrient supply alters goldenrod's induced response to herbivory. *Functional Ecology* (in press). doi: 10.1111/1365-2435.12681

6. **Burghardt, K.T**. & D. W. Tallamy. 2015. Not all non-natives are equally unequal: Reductions in herbivore β-diversity depend on plant phylogenetic similarity to native community. *Ecology Letters* 18:1087-1098 (2015)

5. Schmitz, O.J,R. W. Buchkowski**, K.T. Burghardt**, & C. M. Donihue, Functional traits and trait-mediated interactions: connecting community level interactions with ecosystem functioning. *Advances in Ecological Research* 52:319-343 (2015)

4. **Burghardt, K.T.** & O.J. Schmitz, Influence of Plant Defenses and Nutrients on Trophic Control of Ecosystems. Chapter 8 in *Trophic Ecology: Bottom-Up and Top-Down Interactions across Aquatic and Terrestrial Systems.* (ed. by T. Hanley and K.J. La Pierre). Cambridge University Press, Cambridge, MA. (2015).

3. **Burghardt, K. T**. & D. W. Tallamy. “Plant origin asymmetrically impacts feeding guilds and drives community structure of herbivorous arthropods.” *Diversity and Distributions,* 19:1553-1565(2013).

2**. Burghardt, K. T**., D. W. Tallamy, C. Philips, and K. J. Shropshire. “Non-native plants reduce abundance, richness, and host specialization in lepidopteran communities.” *Ecosphere* 1(5):art11. doi:10.1890/ES10-00032.1 (2010).

1. **Burghardt, K. T**., D. W. Tallamy, and W. G. Shriver. “Impact of native plants on bird and butterfly biodiversity in suburban landscapes.” *Conservation Biology* 23:219–224 (2009).

**In review:**

\*Urban-Mead, K.R., K.T. Burghardt, O.J. Schmitz, “Influence of forest gradient on wild bee trait groups in old-field flower visitor networks.” *Oecologia* (in review) \*Undergraduate mentee

**GRANTS/AWARDS**

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| --- | --- |
| 2016-present2014-2016 2010-2015 | Smithson Fellowship Program- Sandra Day O’Conner Fellow ($53,000)NSF Doctoral Dissertation Improvement Grant ($21,645)NSF Graduate Research Fellowship ($126,000) |
| 20142014 t  | American Society of Naturalists Student Research Award ($2,000)EEB Best Poster Award |
| 20142013  | Graduate Women in Science fellowship: Honorable MentionGraduate Conference Travel Award |
| 2012  | Lee S. Pierce summer fellowship ($4,000) |
| 2012 | YIBS Center for Field Ecology Grant (3,000) |
| 2012  | NASA-MSU professional enhancement award ($700) |
| 2004-2007  | Alfred F. Dupont Undergraduate Scholar (merit scholarship- $120,000) |
| 2007  | Dale F. Bray Award (departmental award: conservation and intellectual merit) |
| 2006  | Undergraduate Research Fellow (research grant and support-$3500) |
| 2004-2007  | Dean’s Scholar (successfully proposed interdisciplinary major) |
| 2005 | Science Scholar (summer undergraduate research grant-$3500) |
| 2003, 2005  | UD Woman of Promise selection (honored by the female faculty) |
| 2005  | Alpha Zeta Award (highest GPA in UD College) |
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**Research Interests:** Wildlife conservation; Linking ecosystem and community ecology; Plant/insect interactions; Biodiversity conservation within human-managed landscapes; Diversity patterns and quantification; Functional trait-based approaches

**RESEARCH TRAINING**

2016-present Smithson Postdoctoral Fellowship, Smithsonian Environmental Research Center (SERC), Edgewater, MD

2010-2016 Dissertation Research, Yale University

2007-2010 Senior Research Technician, Entomology and Wildlife Ecology, Newark, DE

2007 Biological Intern, Southwestern Research Station, Portal, AZ

2006 Undergraduate Research Fellow, Ecology Lab, University of Delaware

2005 Science Scholar, Ecology Lab, University of Delaware

**TEACHING**

**Teaching Fellowships (similar to teaching assistantships):**

Terrestrial Arthropods

Terrestrial Arthropods Lab course

Ecosystem/Field Ecology (field-based course)

Ecology, Evolution, and Behavior (taught independent writing section of lecture-based course)

**Training:**

Workshop series: Teaching Writing (Workshop Series)

Fundamentals of Teaching Science Labs (Workshop Series)

Course Design and Syllabus development (Advanced Teaching Workshop)

Gender Bias in the Classroom (Advanced Teaching Workshop)

The Flipped Classroom (Advanced Teaching Workshop)

Preparing and Delivering a Lecture (Advanced Teaching Workshop)

Teacher Observation Training (Advanced Teaching Workshop)

Teaching First Generation and Non-Traditional Students (Advanced Teaching Workshop)

**Undergraduate Mentorship**

Katherine Urban-Mead (2013-2015, Yale 2014)

Brain Wysolmerski (2012, Pomona College 2014)

**PRESENTATIONS**

**Invited:**

2014 Quiet Corner Initiative Seminar Series, “Plant defense and herbivore offense in old field ecosystems”

2014 Northeast Natural History Conference, If you’ve seen one tree: The alpha and beta diversity of herbivores in experimental native and non-native tree communities. In: Urban Ecology: Spineless Wonders: Invertebrate Research in Urban Systems I and II.

2011 University of Delaware Wildlife Ecology seminar, “Evolutionary origin of landscaping plants: Impacts on insect abundance, diversity, and community structure.”

**Contributed:**

2015 Ecological Society of America, “Not all non-natives and equally unequal: the β-diversity of herbivores in experimental tree communities”

2014 Ecological Society of America, “Induced plant defensive traits in ecosystems: The consequences of genes and nutrients in Solidago altissima.”

2014  Century Naturalists Conference of the American Society of Naturalists. “Plant induced defensive traits in ecosystems.”

2013 EEB graduate research symposium. “To tolerate or resist: plant responses to herbivory in different nutrient contexts”

2013 Gordon Research Conference: Plant-herbivore interactions, “Plasticity in plant defensive traits to nutrient context.”, Poster

2012 US-IALE Landscape Ecology Meeting, “The evolutionary origin of landscaping plants and herbivore populations: implications for the functioning of managed landscapes.”

2011 Grasslands in a Global Context, “The impact of fire and grazing on insect community composition: A cross-continental comparison.” Poster

2009 Entomological Society meeting, “Impact of Native Plants on Bird and Butterfly Biodiversity in Suburban Landscapes.”

2007 Entomological Society meeting, “Trophic Dynamics and Native Landscaping in a Suburban Landscape.”

2006 Entomological Society meeting, “Linking insect biomass to the success of vertebrate insectivores.”

**PROFESSIONAL ASSOCIATIONS/SERVICE**

**Society membership:**

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| 2012-present  | American Society of Naturalists |
| 2011-2012  | International Association of Landscape Ecology |
| 2009-present | Ecological Society of America |
| 2006-2009  | Entomological Society of America |

**Reviewer for:**

Biological Invasions

Ecology

European Journal of Entomology

Insect Conservation and Diversity

Journal of Insect Science

Urban Ecosystems

**Departmental and Extracurricular Service:**

2011-2013 Yale EEB Student Recruitment Chair

2013 Yale EEB Hutchinson Speaker Host

2013-2015 Yale Women’s Club Ultimate Frisbee Team Coach

**Outreach Activities (selected):**

* Developed and published educational module illustrating potential perverse economic effects of designating conservation land
* Amigos de Corcovado conservation organization board member and president
* Developed and presented workshop and seminar for the Quiet Corner Initiative which promotes sustainable practices around Yale-Myers Forest
* Consultant for Wallingford Conservation Commission for old field management for biodiversity
* Presentations at numerous Agricultural days and fairs on the use of native plants within sustainable backyard landscapes
* Research featured in popular magazine and news articles (i.e. Audubon magazine and American Forests)

**Technical Skills:**

*Specialized Software*: I primarily code with R programming language for statistical analysis, modeling, and graphics. Also proficient in: SAS, Access, ArcView for GIS, Adobe Photoshop/Illustrator (and freeware versions Gimp/Inkscape), web design, and standard programs (Word, Excel, Powerpoint).

 *Identification*: Eastern USA trees/ herbs/grasses, insects (particularly herbivores and larval stages), birds by sight and call

*Experimental design and methodology*: line intercept sampling; box plot sampling; fixed-radius point counts; bird, nest, and egg handling and monitoring; mist-netting, trapping, and banding; greenhouse and lab propagation of plants and insects; common garden and randomized block designs

*Ecosystem analysis*: soil analysis and litter decomposition (nutrient content and availability, texture, pH, carbon and nitrogen mineralization, stable isotopes etc.)