DOUGLAS SPONSLER

EDUCATION

2016 • The Ohio State University

Ph.D. in Entomology

Oclumbus, Ohio, USA

2010 • Cedarville University

B.S. in Biology

Cedarville, Ohio, USA

PROFESSIONAL EXPERIENCE

2020 | present

Postdoctoral Researcher

Department of Animal Ecology and Tropical Biology, University of Würzburg

♥ Würzburg, Germany

- · Lead pollinator competition module of EU Project Safeguard
- Lead study of bumble- bee-wildflower interactions in Berchtesgadener Alps
- · Mentor Ph.D. and MS students
- Provide statistical support to students and colleagues
- Organize department seminar program
- Contribute to classroom- and field-based teaching

2018 | 2021

Research Associate

The Academy of Natural Sciences of Drexel University

Philadelphia, PA, USA

- · Lead study of urban plant-pollinator ecology in Philadelphia
- Communicate research to museum visitors

2017 | 2020

Postdoctoral Fellow

Pennsylvania State University

- Ouniversity Park, PA, USA
- Design, conduct, and analyze USDA-NIFA-funded field studies of honey bee colony health
- Lead an NSF-funded multi-institutional working group in the development of a framework for understanding pesticide effects on pollinators
- Extend research to beekeeper and master gardener organizations
- · Contribute to classroom- and field-based teaching

PEER-REVIEWED PUBLICATIONS

in-review

Next-generation colony weight monitoring: a review and prospectus

Apidologie

McMinn-Sauder H [...] Sponsler DB

CONTACT INFO

Department of Animal Ecology and Tropical Biology

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Am Hubland

Würzburg, Germany

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 $R^{\text{G}}_{\text{ResearchGate}}$

GoogleScholar

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INTERESTS

Flower-insect interactions

Bayesian statistics and causal inference

Philosophy of science

Urban ecology

Human-nature interactions

Natural history

LANGUAGES

English (native)

German (B1 / early intermediate)

in-review	•	Antimicrobial wound care in an ant society Nature Ecology and Evolution Frank ET [] Sponsler DB, et al
in-review		Distance functions underlying natural enemy within-field distributions: assessing the effects of crop type and adjacent habitats Proceedings of the Royal Society B Boetzl FA, Sponsler DB, et al.
2023	•	Pollinator competition and the structure of floral resources Ecography (in press) Sponsler DB, Iverson AL, Steffan-Dewenter I
2022	•	Grassy-herbaceous land moderates regional climate effects on honey bee colonies in the Northcentral U.S. Environmental Research Letters 17;064036 Quinlan G, Sponsler DB, Gaines-Day HR, McMinn-Sauder HBG, Otto CRV, Smart AH, Colin T, Gratton C, Isaacs R, Johnson R, Milbrath MO, Grozinger CM
2022		Contrasting patterns of richness, abundance, and turnover in mountain bumble bees and their floral hosts Ecology 2022;e3712 Sponsler DB, Requier F, Kallnik K, Claßen A, Maihoff AF, Sieger J, Steffan-Dewenter I
2022		Floral preferences of mountain bumble bees are constrained by functional traits but flexible through elevation and season Oikos 2022;3:e08902 Sponsler DB, Requier F, Kallnik K, Claßen A, Maihoff AF, Sieger J, Steffan-Dewenter I
2021:		Beekeeping in, of, or for the city? A socioecological analysis of urban apiculture in the United States. People and Nature 2021;3:550-559 Sponsler DB, Bratman EZ
2021:		Honey bees and neonicotinoid-treated corn seed: contamination, exposure, and effects <i>Environmental Toxicology and Chemistry</i> 2021;40:1212-1221 Lin C-H, Sponsler DB , Richardson RT, Watters H, Glinski D, Henderson M, Minucci J, Lee EH, Purucker T, Johnson RM.

Application of plant metabarcoding to identify diverse honeybee pollen forage along an urbanagricultural gradient

Molecular Ecology 2021;30:310-323

Richardson RT, Eaton T, Lin C-H. Cherry G, Johnson RM, Sponsler DB

• Characterizing the floral resources of a North American metropolis using a honey bee foraging assay

Ecosphere 2020;e03102

Sponsler DB, Shump D, Richardson RT, Grozinger CM

A screening-level assessment of the pollinator-attractiveness of ornamental nursery stock using a honey bee foraging assay

Scientific Reports 2020;10:831

Sponsler DB, Grozinger CM, Richardson RT, Nurse A, Brough D, Patch H, Stoner K

2020: • County-level analysis reveals a rapidly shifting landscape of bee toxic load on US farmland

Scientific Reports 2020;10:797

Douglas MR, Sponsler DB, Lonsdorf EV, Grozinger CM

MetaCurator: A hidden Markov model-based toolkit for extracting and curating sequences from taxonomically-informative genetic markers

Methods in Ecology and Evolution 2020;11:181-186

Richardson RT, Sponsler DB, McMinn-Sauder H, Johnson RM

2019: Pesticides and pollinators: a socioecological synthesis.

Science of the Total Environment 2019;662:1012-1027

Sponsler DB, Grozinger CM, Hitaj C, Rundlöf M, Botías C, Code A, Lonsdorf EV, Melathopoulos AP, Smith DJ, Suryanaryanan S, Thogmartin WE, Williams NM, Zhang M, Douglas MR

Quantitative multi-locus metabarcoding and waggle dance interpretation reveal honey bee spring foraging patterns in Midwest agroecosystems

Molecular Ecology 2019;28:686-697

Richardson RT, Curtis HR, Matcham EG, Lin C-H, Suresh S, Sponsler DB, Hearon LE, Johnson RM

Spatial and taxonomic patterns of honey bee foraging: a choice test between urban and agricultural landscapes

Journal of Urban Ecology 2017;3:1-7

Sponsler DB, Matcham EG, Lin C-H, Lanterman JL, Johnson RM

Mechanistic modeling of honey bee pesticide exposure: the missing keystone of honey bee toxicology

Toxicology and Chemistry 2017;36:871-881

Sponsler DB, Johnson RM

2015: • Honey bee success predicted by landscape composition in Ohio, USA

PeerJ 2015;3:e838.

Sponsler DB, Johnson RM

Application of ITS2 metabarcoding to determine the provenance of pollen collected by honey bees in an agroecosystem

Applications in Plant Sciences 2015;3:1400066

Richardson RT, Lin C-H, Sponsler DB, Quijia-Pillajo JO, Goodell K, Johnson RM

POPULAR PUBLICATIONS

2017: Poisoning a society: a superorganism perspective on honey bee toxicology

Bee World 2017;95:30-32.

Sponsler DB, Johnson RM

Honey bee success in Ohio's landscapes

Ohio Beekeeping 2015;4:26-27.

Sponsler DB

2014: • Honey bee losses and toxic corn seed dust.

Ohio Beekeeping 2014;3:11-23. Sponsler DB, Lin C-H, Johnson RM

■ GRANTS

2020: Establishing the Penn State honey diagnostics lab to serve Pennsylvania beekeepers (\$47,797)

Pennsylvania Commonwealth Specialty Crop Block Grant.

Grozinger CM, Sponsler DB

Strengthening urban apiculture, crop production, and biodiversity by understanding the habitat needs of wild and managed bees (\$163.00)

USDA-NIFA-AFRI Postdoctoral Fellowship

Sponsler DB, Grozinger CM

Location, location: developing tools for selection and management of landscapes to promote healthy bee populations (\$9,777)

North American Pollinator Protection Campaign

Jones TO, Lonsdorf E, Douglas M, Grozinger C, Patch H, Sponsler DB

2017: • Impact of urban landscapes on honey bee nutritional resources: a pilot study (\$6,037)

Apes Valentes

Sponsler DB, Grozinger CM

2015: • An Ohio pollen database (\$2,500)

Ohio State Beekeepers' Association

Sponsler DB, Lin C-H, Richardson RT, Wransky M, Johnson RM

Honey bee nutrition in the Midwestern landscape: assessing pollen diversity and nutrition along an urban-rural gradient in central Ohio (\$2,990)

Ohio Agricultural Research and Development Center SEEDS Program

Sponsler DB, Johnson RM

2013: • Development of a portable hive scale (\$2,000)

Ohio State Beekeepers' Association

Sponsler DB, Johnson RM

2012: • Honey bee success in urban and rural landscapes (\$2,478)

Ohio State Beekeepers' Association

Sponsler DB, Johnson RM

		FELLOWSHIPS AND AWARDS	
2018:	•	Environmental Toxicology and Chemistry Best Paper	
		Society for Environmental Toxicology and Chemistry	
2016:	•	Ray Travel Award	
		The Ohio State University	
2016:	•	Foundation Scholarship	
		The Foundation for the Preservation of Honey Bees	
2014:	•	President's Prize runner up (10-min paper)	
		Entomological Society of America	
2014:	•	James E. Tew Extension Award	
		The Ohio State University	
2012:	•	President's Prize (10-min paper)	
		Entomological Society of America	
2014:	•	Director's Fellowship	
		The Ohio Agricultural Research and Development Center	
		MENTORING	
2023	•	MS mentor	Out the state of Marie Is an Alarma Is an Output
present		Co-mentor of Michael Wiesneth	University of Würzburg, Würzburg, Germany
2023 present		MS mentor Co-mentor of Murray Hamilton.	♥ University of Würzburg, Würzburg, Germany
2022	•	MS mentor	O
present		Co-mentor of Jessica Strehl.	University of Würzburg, Würzburg, Germany
2022 present		Ph.D. mentor External committee member for Austin Martin.	▼ Temple University, Philadelphia, PA
2021 present		Ph.D. mentor Co-advisor of Giulia Mainardi.	♥ University of Würzburg, Würzburg, Germany
2017 2018	•	Undergraduate mentor Supervised undergraduate research Dalton Brough.	Penn State University, University Park, PA

2014 2015	•	Science Olympiad coach (NSF GK-12)	♥ Orrville Middle School, Orrville, OH
		COURSE INSTRUCTION	
2016	•	Pesticides and their Use Developed and taught course	Ohio Agricultural Technical Institute, Wooster, OH
2016		General Entomology Lab instructor	Ohio Agricultural Technical Institute, Wooster, OH
2014	•	Philosophy of Science Visiting instructor	♥ Central Christian High School, Kidron, OH
2012	•	Energy Transfer and Development Graduate Teaching Assistant	◆ The Ohio State University, Columbus, OH
		GUEST LECTURES	
2023	•	Interdepartmental Ring Lecture (Ecology and Time)	♥ University of Würzburg, Würzburg, Germany
2020 2022		Honey Bee Ecology	♥ University of Würzburg, Würzburg, Germany
2021	•	Animal Pollinators	♥ University of Würzburg, Würzburg, Germany
2020 2023	•	R Club (GAMs, Writing in RMarkdown, Causal Inference)	♥ University of Würzburg, Würzburg, Germany
2019	•	Pollination Ecology	♥ California State University Fresno, Fresno, CA
2019	•	Urban Ecology	PA Master Naturalist Program, Philadelphia, PA
2019		Introduction to Ecology	PA Master Naturalist Program, Philadelphia, PA
2019	•	Plant-Animal Interactions	♥ Drexel University, Philadelphia, PA
2018	•	Advances in Ecology	♥ Pennsylvania State University, State College, PA
2018		Pollinators in Designed Greenspace	♥ Pennsylvania State University, State College, PA
2018		Urban Pollinator Ecology	♥ Dickinson College, Carlisle, PA.
2017	•	Honey Bees and Humans	Pennsylvania State University, State College, PA

2013 2015	•	Beekeeping	ЭΗ
		INVITED PRESENTATIONS	
2023:	•	Gardens as pollinator habitat: limitations, potential, and context New Directions in the American Landscape (NDAL) annual symposium (14 Mar 2023) ◆ Philadelphia, PA (virtual) Sponsler DB	al)
2022:		Flowers are food, pollinators are florivores, and what we're doing here is trophic ecology. Protecting Pollinators in Urban Landscapes Conference (11 Oct 2022) Sponsler DB ◆ Athens, GA (virtual)	ત્રી)
2022:	•	Flowers, insects, and people: stewarding an ancient mutualism through greenspace design New Directions in the American Landscape (NDAL) annual symposium (27 Jan 2022)	al)
2022:		Pollinator competition and the structure of floral resources Lund University (28 Oct 2021) Sponsler DB Cund, Sweden (virtual)	al)
2021:		Mountain bumble bees and wildflowers exhibit nonlinear patterns of abundance and β-diversity, punctuated by the tree line ecotone Naturalis Biodiversity Center (19 Apr 2021) Sponsler DB Culturalis Apr 2021	ત્રી)
2020:	•	Landscape-scale flow/dearth monitoring: a robust method for messy data 4th International Conference on Bee and Hive Monitoring (8 Oct 2020) Sponsler DB Wissoula, Montana (virtual)	al)
2019:	•	Landscape anthecology: a paradigm, a toolkit, and an application American Entomological Society (4 Dec 2019) Sponsler DB ◆ Philadelphia, PA	PA
2019:	•	Floral resource topography of a North American metropolis revealed by honey bee foraging assay The Academy of Natural Sciences of Drexel University (15 Nov 2019) Sponsler DB Philadelphia, PA Sponsler DB	PΑ
2019:		Floral resource topography of a North American metropolis revealed by honey bee foraging assay International Conference for Pollinator Biology (20 Jul 2019) P Davis, CA Sponsler DB, Shump D, Richardson RT, Grozinger CM.	Ά
2018:		Honey bee foraging in the City of Neighborhoods: Two years of colony weight monitoring reveal spatial and temporal patterns of floral availability Entomological Society of America (14 Nov 2018) Sponsler DB, Shump D, Grozinger CM P Vancouver, Canada Sponsler DB, Shump D, Grozinger CM	da

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2018:	•	Plants, pollinators, and people in the City of Neighborhoods Drexel University (27 Sep 2018) Sponsler DB	Philadelphia, PA
2018:	•	Honey bee foraging patterns and colony weight dynamics reveal ecological hetero	geneity of urban
		landscape Entomological Society of America, Eastern Branch (19 Mar 2018) Sponsler DB, Shump D, Grozinger CM	♥ Annapolis, MD
2018:	•	Flying needles in a landscape-scale haystack: the challenge of observing foraging International Society for Optics and Photonics (SPIE), Penn State student chapter (1 Feb 2018	
		Sponsler DB	♥ University Park, PA
2018:	•	Bees, flowers, and people in "The City of Neighborhoods" Franklin and Marshall University (26 Jan 2018) Sponsler DB	♀ Lancaster, PA
2017:	•	Bees and the urban food scene Entomological Society of America (8 Nov 2017) Sponsler DB, Shump D, Patch HM, Grozinger CM	♥ Devner, CO
2017:	•	Honey bee landscape ecology Bucks County Community College, first annual science seminar (19 May 2017) Sponsler DB	♥ Newtown, PA
2017:	•	Integrating landscape and behavior to predict honey bee pesticide exposure Eastern Branch of the Entomological Society of America (20 Mar 2017) Sponsler DB	♥ Newport, RI
2016:	•	Integrating landscape and behavior to predict honey bee pesticide exposure Workshop on pollinator ecosystem services, Penn State University (20 Dec 2016) Sponsler DB	State College, PA
2016:	•	Honey bee landscape ecology: foraging, toxic exposure, and apicultural outcomes Miami University of Ohio (4 Dec 2016) Sponsler DB	♥ Miami, OH
2016:	•	Urban vs. rural beekeeping: the proof is in TriCounty Beekeepers' Association Annual Spring Workshop (5 Mar 2016) Sponsler DB, Matcham EG, Lin C-H, Johnson RM	♥ Wooster, OH
		OUTREACH PROGRAMMING	
2020	•	Museum Exhibitor Hosted an exhibit of bees diversity for Martin Luther King, Jr Day event. ◆ The Academy of Natural Sciences of Drexel Unive	rsity, Philadelphia, PA
2019	•	Workshop Instructor Led live honey bee dance decoding activity for museum visitors during the annual BugFest eve ◆ The Academy of Natural Sciences of Drexel Univer-	

2019		Workshop Instructor Five-day USDA-PDSTEP workshop (APPL-RED) training middle and high school teachers to develop project-based lessons on plant-pollinator interactions
		Penn State University, University Park, PA
2019	•	Workshop Instructor
		Workshop for urban gardeners and farmers to build nests for stem-nesting wild bees. • Philadelphia Beekeepers Guild, Philadelphia, PA
2019	•	Workshop Instructor
		Workshop for urban gardeners and farmers to build nests for stem-nesting wild bees. ▼ Awbury Arboretum, Philadelphia, PA
2019	•	Workshop Instructor
		Workshop for urban gardeners and farmers to build nests for stem-nesting wild bees. ◆ Penn State Center, Philadelphia, PA
2017		Workshop Instructor
		Five-dayUSDA-PDSTEP workshop (APPL-RED) training middle and high school teachers to develop project-based lessons on plant-pollinator interactions
		Penn State University, University Park, PA
2015	•	Workshop Instructor
 2016		Led field trips to the OSU Department of Entomology for preschool, elementary, and middle school students from Wooster Summer Camp and the Montessori School of Wooster.
		Ohio State University, Wooster, OH
2015		Workshop Instructor Co-led stream macroinvertebrate workshop for children at the Family Farm Field Day agricultural fair ▼ Holmes County, OH
2014		Workshop Instructor Taught microscopy techniques for monitoring Nosema infection in honey bees ♥ Ohio State University, Wooster, OH
2013		Workshop Instructor
2013	Ī	Curated, displayed, and discussed bee specimens at the Power of Pollinators short course. • Ohio State University, Wooster, OH
		SELECTED OUTREACH PRESENTATIONS
2019:	•	The world's best forager vs. the world's most complicated landscape: Three years of studying honey bee foraging in Philadelphia
		Barnstable Beekeepers Association (16 Sep 2019)
		Sponsler DB
2019:	•	Bees, brews, and brotherly love: the avant garde ecology of Philadelphia
		Science on Tap, National Mechanics Pub (12 May 2019)
2019:	•	Bees and urban flora: exploring the trophic ecology of ornamentals, remnants, and "weeds" in the
		city Philadelphia Botanical Club (28 Feb 2019) Sponsler DB Philadelphia, PA

2019:		The evolving science and policy of pesticides and pollinators Pennsylvania Agronomy Education Conference (17 Jan 2019) Sponsler DB	♥ Boalsburg, PA
2019:	•	Integrated tools for honey bee landscape ecology American Honey Producers Association (11 Jan 2019) Sponsler DB	♥ Tempe, AZ
2018:	•	What is the place of bees and beekeepers in the ecology of the city? Philadelphia Honey Festival (9 Sep 2018) Sponsler DB	♥ Tempe, AZ
2018:		Bees, flowers, and people in "The City of Neighborhoods" Philadelphia Beekeepers' Guild (19 Apr 2018) Sponsler DB	Philadelphia, PA
2017:	•	Bees and the Philly food scene Philadelphia Beekeepers' Guild (18 May 2017) Sponsler DB	Philadelphia, PA
2017:	•	Honey bee landscape ecology Mountain State Beekeepers' Association (1 May 2017) Sponsler DB	♥ Kearneysville, WV
2017:		Honey bees and pesticides Champlaine Valley Beekeepers' Association (29 Apr 2017) Sponsler DB	♥ Beekmantown, NY
2016:		Honey bee foraging in Ohio's landscapes TriCounty Beekeepers' Association (31 Aug 2016) Sponsler DB	♥ Wooster, OH
2016:		Honey bee landscape ecology American Beekeeping Federation (7 Jan 2016) Sponsler DB	♥ Jacksonville, FL
2014:	•	Predatory flies Secret Lives of Good Garden Bugs Workshop (15 May 2014) Sponsler DB	♥ Cleveland, OH
2014:		So, how are the bees? Complexity, confusion, and consensus in the world of hor Cucumber Growers' Meeting, Ohio Agricultural Research and Development Center (25 Mar 2 Sponsler DB	_
2013:	•	Honey bee geography: why thinking outside the box might be the key to helping OARDC Staff Advisory Council (22 Oct 2013) Sponsler DB	honey bees ♥ Fremont, OH

2013:	•	Honey bee health, colony collapse disorder, and why it matters Congressional Assistants' tour of OARDC (16 Aug 2013) Sponsler DB
2013:	•	An introduction to bee diversity and natural history Master Gardener Pollinator Training Workshop (22 Jun 2013) Sponsler DB ♥ Wooster, OH
		PROFESSIONAL TRAINING
2022:	•	Data management 5-day short course on research data management ♥ German Ecological Society (GfÖ), virtual meeting
2018:	•	Open Source Geospatial Data Analysis 3-day short course on geospatial data analysis with R and Python
2016:		Socioecological Synthesis Center (SESYNC), Annapolis, MD REACH suicide prevention training
2016:	Ĭ	Workshop on suicide prevention, designed especially for professors working with undergraduate students ◆ The Ohio State University, Columbus, OH
2016:	•	Introduction to individual-based/agent-based modelling Two-day workshop taught by Volker Grimm, Nika Galic, and Michael Crawford ◆ Towson, MD
2016:		Diversity and implicit bias awareness training Three-day workshop on mitigating implicit bias, promoting diversity, and aiding distressed individuals ▼ The Ohio State University, Columbus, OH
2011:	•	Native bee identification, ecology, research, and monitoring Five-day course workshop taught by Sam Droege, Alana Taylor, and Rob Jean ▼ National Conservation Training Center, Shepherdstown, WV
		SERVICE
2022 present	•	Equal Opportunity Committee Member Project Safeguard, European Union Research Consortium
2020 present		Seminar coordinator Department of Animal Ecology and Tropical Biology of the University of Würzburg
2019 present		Executive committee member Philadelphia Botanical Club
2019	•	Diversity and inclusion panel member Penn State University, Department of Entomology
2018	•	Student competition judge Entomological Society of America and the Society for Environmental Toxicology and Chemistry
2017	•	Activity leader, Great Insect Fair Penn State University, Department of Entomology
2014 2015	•	Faculty hiring committee member The Ohio State University, Department of Entomology

2014	•	Summer Research Opportunities Program (SROP) panel member
 2015		The Ohio State University, Department of Entomology
2013 2015		Treasurer, Entomology Graduate Student Association The Ohio State University, Department of Entomology
2011	•	Volunteer curatorial assistant The Academy of Natural Science, Philadelphia, PA.
2009	•	President, ProTerraForma. Student conservation club, Cedarville University
		SKILLS
	•	R statistical software
		Directed acyclic graphs and causal inference
		Bayesian data analysis
		Multivariate statistics
		Geographic Information Systems (GIS)
	•	Graphic design and image processing (Inkscape, GIMP)
	•	Beekeeping
		DNA metabarcoding
	•	Microscopy
		GRANT REVIEWING
2022		European Partnership Biodiversa+
2021		Estonian Research Council
2019		USDA National Institute of Food and Agriculture (USDA-NIFA)
2014		SEEDS, an intramural funding program of the Ohio State University College of Food, Agriculture, and Environmental Science.

MANUSCRIPT REVIEWING **Apidologie Agricultural and Forest Entomology Behavioral Ecology and Sociobiology** Biology **Ecology and Evolution Ecosphere Ecological Applications** Frontiers in Ecology and Evolution Insects **Insect Conservation and Diversity Journal of Applied Ecology Journal of Ecology Journal of Economic Entomology Molecular Ecology** Oecologia Oikos PeerJ **Scientific Reports**

Urban Ecosystems

- Urban Forestry and Urban Greening
- SOCIETY MEMBERSHIP
- The Ecological Society of Germany, Switzerland, and Austria