DOUGLAS SPONSLER

🔖 EDUCATION

2016 ● **The Ohio State University**
Ph.D. in Entomology   📍 Columbus, 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   📍 University 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

2022 ● **Grassy–herbaceous land moderates regional climate effects on honey bee colonies in the Northcentral U.S.**
Environmental Research Letters (in press)
Quinlan G, **Sponsler D**, Gaines-Day HR, McMinn-Sauder HBG, Otto CRV, Smart AH, Colin T, Gratton C, Isaacs R, Johnson R, Milbrath MO, Grozinger CM

CONTACT INFO

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Am Hubland

Würzburg, Germany

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R^G [ResearchGate](#)

8^l [GoogleScholar](#)

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INTERESTS

Flower-insect interactions

Ecological data analytics

Urban ecology

Human-nature interactions

Natural history

Ecological pedagogy

LANGUAGES

English (native)

German (B1 / early intermediate)

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**
Environmental Toxicology and Chemistry 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.

2021: **Application of plant metabarcoding to identify diverse honeybee pollen forage along an urban–agricultural gradient**
Molecular Ecology 2021;30:310-323

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

2020: **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

2020: **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

2020: **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

2019: **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

2017: **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

2017: **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

2015: **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

2015: **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**

2018: **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

2017:   **Location, 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

2014:   **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

2022 **MS mentor**
Co-mentor of Murray Hamilton. 📍 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

2020
|
2021 **Honey Bee Ecology**

📍 University of Würzburg, Würzburg, Germany

2021 **Animal Pollinators**

📍 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	**Beekeeping**	
2015		📍 The Ohio State University, Columbus, OH

🔖 INVITED PRESENTATIONS

2022:
Flowers, insects, and people: stewarding an ancient mutualism through greenspace design
New Directions in the American Landscape (NDAL) annual symposium (27 Jan 2022)   📍 Philadelpia, PA (virtual)
Sponsler DB

2022:
Pollinator competition and the structure of floral resources
Lund University (28 Oct 2021)   📍 Lund, Sweden (virtual)
Sponsler DB

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)   📍 Leiden, Netherlands (virtual)
Sponsler DB

2020:
Landscape-scale flow/dearth monitoring: a robust method for messy data
4th International Conference on Bee and Hive Monitoring (8 Oct 2020)   📍 Missoula, Montana (virtual)
Sponsler DB

2019:
Landscape anthecology: a paradigm, a toolkit, and an application
American Entomological Society (4 Dec 2019)   📍 Philadelphia, PA
Sponsler DB

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)   📍 Philadelphia, PA
Sponsler DB

2019:
Floral resource topography of a North American metropolis revealed by honey bee foraging assay
International Conference for Pollinator Biology (20 Jul 2019)   📍 Davis, CA
Sponsler DB, Shump D, Richardson RT, Grozinger CM.

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) ◆ Vancouver, Canada
Sponsler DB, Shump D, Grozinger CM

2018: **Plants, pollinators, and people in the City of Neighborhoods**
Drexel University (27 Sep 2018) ◆ Philadelphia, PA
Sponsler DB

2018: **Honey bee foraging patterns and colony weight dynamics reveal ecological heterogeneity of urban landscape**
Entomological Society of America, Eastern Branch (19 Mar 2018) ◆ Annapolis, MD
Sponsler DB, Shump D, Grozinger CM

2018: **Flying needles in a landscape-scale haystack: the challenge of observing foraging bees**
International Society for Optics and Photonics (SPIE), Penn State student chapter (1 Feb 2018)
◆ University Park, PA
Sponsler DB

2018: **Bees, flowers, and people in "The City of Neighborhoods"**
Franklin and Marshall University (26 Jan 2018) ◆ Lancaster, PA
Sponsler DB

2017: **Bees and the urban food scene**
Entomological Society of America (8 Nov 2017) ◆ Devner, CO
Sponsler DB, Shump D, Patch HM, Grozinger CM

2017: **Honey bee landscape ecology**
Bucks County Community College, first annual science seminar (19 May 2017) ◆ Newtown, PA
Sponsler DB

2017: **Integrating landscape and behavior to predict honey bee pesticide exposure**
Eastern Branch of the Entomological Society of America (20 Mar 2017) ◆ Newport, RI
Sponsler DB

2016: **Integrating landscape and behavior to predict honey bee pesticide exposure**
Workshop on pollinator ecosystem services, Penn State University (20 Dec 2016) ◆ State College, PA
Sponsler DB

2016: **Honey bee landscape ecology: foraging, toxic exposure, and apicultural outcomes**
Miami University of Ohio (4 Dec 2016) ◆ Miami, OH
Sponsler DB

2016: **Urban vs. rural beekeeping: the proof is in**
TriCounty Beekeepers' Association Annual Spring Workshop (5 Mar 2016) ◆ Wooster, OH
Sponsler DB, Matcham EG, Lin C-H, Johnson RM

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 University, Philadelphia, PA

2019

Workshop Instructor
Led live honey bee dance decoding activity for museum visitors during the annual BugFest event.
📍 The Academy of Natural Sciences of Drexel University,, Philadelphia, PA

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 | 2016

Workshop Instructor
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
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)   📍 Barnstable, MA (virtual)
Sponsler DB

2019: **Bees, brews, and brotherly love: the avant garde ecology of Philadelphia**
Science on Tap, National Mechanics Pub (12 May 2019) 📍 Philadelphia, PA
Sponsler DB

2019: **Bees and urban flora: exploring the trophic ecology of ornamentals, remnants, and "weeds" in the city**
Philadelphia Botanical Club (28 Feb 2019) 📍 Philadelphia, PA
Sponsler DB

2019: **The evolving science and policy of pesticides and pollinators**
Pennsylvania Agronomy Education Conference (17 Jan 2019) 📍 Boalsburg, PA
Sponsler DB

2019: **Integrated tools for honey bee landscape ecology**
American Honey Producers Association (11 Jan 2019) 📍 Tempe, AZ
Sponsler DB

2018: **What is the place of bees and beekeepers in the ecology of the city?**
Philadelphia Honey Festival (9 Sep 2018) 📍 Tempe, AZ
Sponsler DB

2018: **Bees, flowers, and people in "The City of Neighborhoods"**
Philadelphia Beekeepers' Guild (19 Apr 2018) 📍 Philadelphia, PA
Sponsler DB

2017: **Bees and the Philly food scene**
Philadelphia Beekeepers' Guild (18 May 2017) 📍 Philadelphia, PA
Sponsler DB

2017: **Honey bee landscape ecology**
Mountain State Beekeepers' Association (1 May 2017) 📍 Kearneysville, WV
Sponsler DB

2017: **Honey bees and pesticides**
Champlaine Valley Beekeepers' Association (29 Apr 2017) 📍 Beekmantown, NY
Sponsler DB

2016: **Honey bee foraging in Ohio's landscapes**
TriCounty Beekeepers' Association (31 Aug 2016) 📍 Wooster, OH
Sponsler DB

2016: **Honey bee landscape ecology**
American Beekeeping Federation (7 Jan 2016) 📍 Jacksonville, FL
Sponsler DB

2014: **Predatory flies**
Secret Lives of Good Garden Bugs Workshop (15 May 2014) 📍 Cleveland, OH
Sponsler DB

2014: **So, how are the bees? Complexity, confusion, and consensus in the world of honey bee health**
Cucumber Growers' Meeting, Ohio Agricultural Research and Development Center (25 Mar 2014) Fremont, OH
Sponsler DB

2013: **Honey bee geography: why thinking outside the box might be the key to helping honey bees**
OARDC Staff Advisory Council (22 Oct 2013) Fremont, OH
Sponsler DB

2013: **Honey bee health, colony collapse disorder, and why it matters**
Congressional Assistants' tour of OARDC (16 Aug 2013) Wooster, OH
Sponsler DB

2013: **An introduction to bee diversity and natural history**
Master Gardener Pollinator Training Workshop (22 Jun 2013) Wooster, OH
Sponsler DB

PROFESSIONAL TRAINING

2018: **Open Source Geospatial Data Analysis**
3-day short course on geospatial data analysis with R and Python
 Socioecological Synthesis Center (SESYNC), Annapolis, MD

2016: **REACH suicide prevention training**
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 **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 | 2015 ● **Summer Research Opportunities Program (SROP) panel member**
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**

● **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**

- **Journal of Applied Ecology**

- **Journal of Ecology**

- **Journal of Economic Entomology**

- **Journal of Visualized Experiments**

- **Molecular Ecology**

- **Oecologia**

- **Oikos**

- **PeerJ**

- **Scientific Reports**

- **Urban Forestry and Urban Greening**