

Dr. Karmi Oxman

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Lab and Apiary Manager | [Lab of Prof. Sharoni Shafir](#)

B. Triwaks Bee Research Center | The Hebrew University of Jerusalem

Behavioral ecologist and science communicator working across honey bee communication, terrestrial isopod neuroethology, social arthropod behavior, field biology, and science illustration.

CURRENT APPOINTMENT

2025-present **Lab and Apiary Manager**, The Hebrew University of Jerusalem
[Lab of Prof. Sharoni Shafir](#), B. Triwaks Bee Research Center, Department of Entomology, Institute of Environmental Sciences, Faculty of Agriculture, Food, and the Environment.
Laboratory and apiary management; honey bee research support; field and teaching infrastructure; science communication.

EDUCATION

2019-2025 **Ph.D.**, Drexel University, Ecology, Evolution & Earth Systems
Advisor: [Sean O'Donnell, PhD](#).
Dissertation: Ethology and neurobiology of xeric-adapted isopods: plasticity in bi-parental care and neuroanatomy of *Hemilepistus reaumuri*. [doi:10.17918/00010894](https://doi.org/10.17918/00010894)

2014-2017 **M.Sc. Agroecology**, The Hebrew University of Jerusalem
Advisor: [Sharoni Shafir, PhD](#); co-advisor: [Ofer Feinerman, PhD](#) (Weizmann Institute of Science).
Thesis: Reliability and the waggle dance: honest honey bees dance more and attract more followers than dishonest bees. Published as *Honey bees increase recruitment effort when dance information is honest*.
[doi:10.1007/s00265-026-03744-2](https://doi.org/10.1007/s00265-026-03744-2)

2008-2012 **B.A. Biology**, Oberlin College
Minor: Environmental Studies.
Senior research project: A supplement to Theodore Mitchell's Bees of the Eastern United States.

RESEARCH POSITIONS

2019-2025 **PhD Student**, Drexel University, Ecology, Evolution & Earth Systems
Laboratory of [Sean O'Donnell, PhD](#). Dissertation research on social behavior, parental care, and neuroanatomy in xeric-adapted terrestrial isopods.

2017-2019 **Research Specialist**, University of Pennsylvania
Advisor: [Maria Geffen, PhD](#). Auditory neuroscience research on cortical mechanisms of emotional learning and flexible sound-frequency categorization.

2018-2019 **Apiary and Research Specialist**, The Pennsylvania State University
Advisors: [Christina Grozinger](#) and [Douglas Sponsler](#). Philadelphia Urban Pollinator Project; waggle dance decoding; wild bee diversity and floral diet study.

2013-2014 **Research Specialist**, The Hebrew University of Jerusalem
Advisors: [Sharoni Shafir, PhD](#), and [Harmen Hendriksma, PhD](#). Honey bee decision making, nutrition, and pollinator garden design.

2012-2013 **Research Specialist**, University of Pennsylvania
Advisor: [Timothy Linksvayer, PhD](#), with [Sandra Rehan, PhD](#). Collective decision making and age polyethism in ants; ant tracking software.

2011-2012 **Research Student**, Oberlin College
Advisor: [Mary Garvin, PhD](#). Bee identification from reclaimed and active coal mining sites; native plant and pollinator teaching garden.

Winter 2012 **Research Assistant**, University of Pennsylvania
Advisor: [Daniel Janzen, PhD](#), and Tanya Dapkey. Biodiversity inventory project.

Spring 2011 **Fieldwork Researcher**, Australian Department of the Environment and Primary Industries
Fieldwork and agricultural surveys for the Asian Honeybee Containment Program.

PUBLICATIONS

- Oxman, K.L.**, Feinerman, O., Shafir, S. 2026. Honey bees increase recruitment effort when dance information is honest. *Behavioral Ecology and Sociobiology*. 80, 73. DOI: [10.1007/s00265-026-03744-2](https://doi.org/10.1007/s00265-026-03744-2)
- Oxman, Karmi Leah**. 2025. Ethology and neurobiology of xeric-adapted isopods: plasticity in bi-parental care and neuroanatomy of *Hemilepistus reaumuri*. Doctoral dissertation, Drexel University. DOI: [10.17918/00010894](https://doi.org/10.17918/00010894)
- Oxman, K.**, Kuabara, K.M.D., O'Donnell, S. 2025. The terrestrial isopod *Porcellionides pruinosus* as a facultative ant guest along foraging trails and inside *Messor ebeninus* nests in the Negev Desert. *Insectes Sociaux*. 72, 269-277. Special issue: *The overlooked biodiversity of ant associates*. DOI: [10.1007/s00040-024-01013-x](https://doi.org/10.1007/s00040-024-01013-x)
- Wood, K.C., Angeloni, C.F., **Oxman, K.L.**, Clopath, C., Geffen, M.N. 2022. Neuronal activity in sensory cortex predicts the specificity of learning in mice. *Nature Communications*. 13, 1167. DOI: [10.1038/s41467-022-28784-w](https://doi.org/10.1038/s41467-022-28784-w)
- O'Donnell, S., Bulova, S., Caponera, V., **Oxman, K.L.**, Giladi, I. 2020. Species differ in worker body size effects on critical thermal limits in seed-harvesting desert ants (*Messor ebeninus* and *M. arenarius*). *Insectes Sociaux*. 67, 473-479. DOI: [10.1007/s00040-020-00782-5](https://doi.org/10.1007/s00040-020-00782-5)
- Hendriksma, H.P., **Oxman, K.L.**, Shafir, S. 2014. Amino acid and carbohydrate tradeoffs by honey bee nectar foragers and their implications for plant-pollinator interactions. *Journal of Insect Physiology*. 69, 56-64. DOI: [10.1016/j.jinsphys.2014.05.025](https://doi.org/10.1016/j.jinsphys.2014.05.025)

HIGHER EDUCATION TEACHING

Semester 2, 2026	Course Technician Apidology, The Hebrew University of Jerusalem
Semester 1, 2025	Course Technician Biology of the Honey Bee, The Hebrew University of Jerusalem
2023	Teaching Assistant Field Botany of the Pine Barrens, Ecology, Evolution & Earth Systems, Drexel University
2023	Co-Instructor Spring Break in Israel: Unique Ecosystems and Sustainability Innovations, Biology Department, Drexel University Planned, booked, and led an 11-day field course for 10 students.
2021 & 2022	Teaching Assistant ENVS 212: Evolution, Department of Ecology, Evolution & Earth Systems, Drexel University Created course material and led four recitation sections for 120 students.
Winter & Summer 2022	Teaching Assistant BIO 224/225: Vertebrate Biology and Evolution Lab & Recitation, Biology Department, Drexel University
2021	Curatorial Assistant Entomology Department, Drexel University Wild bee identification.
2021	Teaching Assistant BIO 389: Gross Anatomy II Laboratory, Biology Department, Drexel University
2020	Teaching Assistant BIO 124: Evolution and Organismal Biology, Drexel University
2019 & 2020	Teaching Assistant ENVS 101: Intro to Environmental Science, Drexel University
2017	Teaching Assistant Beekeeping & Apiary Management, The Hebrew University of Jerusalem
2014-2015	Co-Lead Educator The Hebrew University of Jerusalem Youth Science Center Alongside Dr. Einat Zelinger ; designed and led a seven-month workshop, Form & Function in Honey Bee Architecture.

RESEARCH SUPPORT, FELLOWSHIPS & AWARDS

2026 Jan	International Conference Travel Award, Hebrew University of Jerusalem, Faculty of Agriculture, Environmental Institute (\$1,500).
2024	Oral Presentation Runner-Up, The Crustacean Society, SICB Annual Meeting, Seattle, WA (free annual membership).
2023-2024	William L. McLean Fellowship for ENVS Research, Ecology, Evolution & Earth Systems, Drexel University (\$2,000 + TA stipend).
2024	Domestic Graduate Student Travel Award, Graduate College, Drexel University (\$800).
2023	Graduate Student Travel Award, Ecology, Evolution & Earth Systems, Drexel University (\$500).

2022-2023	Louis and Bessie Stein Family Fellowship, Department of Global Engagement, Drexel University (\$10,000).
2022	Travel Award, Office of Global Engagement, Drexel University (\$500).
2022	Graduate Student Travel Award, Ecology, Evolution & Earth Systems, Drexel University (\$500).
2022	Presidential Funds for Workshop Supplies, Entomological Society of America (\$175).
2021-2022	Susan S. Kilham Research Award, Ecology, Evolution & Earth Systems, Drexel University (\$500).
2020-2021	Louis and Bessie Stein Family Fellowship, Department of Global Engagement, Drexel University (\$6,000).
2020	Travel Award, Department of Global Engagement, Drexel University (\$1,500).
2019	Graduate Student Travel Award, Ecology, Evolution & Earth Systems, Drexel University (\$500).
2016	Lily Tepper Memorial Award of Excellence for Graduate Students, The Hebrew University of Jerusalem (\$2,700).
2016	Gabriel Triwaks Memorial Award for Research with Honey Bees, The Hebrew University of Jerusalem.

FIELDWORK & LAB TRAINING

May 2023	30-day behavioral manipulation in the field, Negev Desert, Israel.
March 2023	Scouting for migratory isopods, Sde Boker and Be'er Sheva, Israel.
September 2022	Collection and behavior videos, Be'er Sheva, Israel.
May 2022; Sept. 2022; June 2023	Immunohistochemistry training for terrestrial isopod neuroanatomy, Case Western Reserve University, Ohio. Host: Gabriella Wolff, PhD.
April 2022	Behavior field assays, Sde Boker, Ben-Gurion University Desert Research Station, Israel.
September 2021	Collection and microCT for 3D imaging of isopods, Volcani Institute, Israel.
May 2021	Collection and behavioral observation of early-season isopods, Sde Boker, Ben-Gurion University Desert Research Station, Israel.
August 2020; Dec. 2019	Collection and experimental design, Sde Boker, Ben-Gurion University Desert Research Station, Israel.
August 2019	Field expedition, ant thermobiology, Sde Boker, Ben-Gurion University Desert Research Station, Israel.

PUBLISHED ILLUSTRATIONS

- Li-Byarlay, H., Boncristiani, H., Howell, G., Herman, J., Clark, L., Strand, M.K., Tapy, D., Rueppell, O. 2020. Transcriptomic and epigenomic dynamics of honey bees in response to lethal viral infection. *Frontiers in Genetics*. 11, 1056. DOI: [10.3389/fgene.2020.566320](https://doi.org/10.3389/fgene.2020.566320)
- Rehan, S.M., Berens, A.J., Toth, A.L. 2014. At the brink of eusociality: transcriptomic correlates of worker behavior in a small carpenter bee. *BMC Evolutionary Biology*. 14, 260. DOI: [10.1186/s12862-014-0260-6](https://doi.org/10.1186/s12862-014-0260-6)
- Rehan, S.M., Rotella, A., Onuferko, T.M., Richards, M.H. 2013. Colony disturbance and solitary nest initiation by workers in the obligately eusocial sweat bee, *Halictus ligatus*. *Insectes Sociaux*. 60, 389-392. DOI: [10.1007/s00040-013-0304-8](https://doi.org/10.1007/s00040-013-0304-8)

PROFESSIONAL SERVICE

Nov. 2022	Planning Committee Palette(able) Entomology: Using SciArt and SciComm for Effective Insect-focused Education and Engagement, Entomological Society of America Annual Meeting, Vancouver, BC. One of five sessions selected into the highest-level symposium category.
Nov. 2022	Workshop Leader ArthroZINE Workshop : DIY Mini Magazines for Collective Learning and Sharing, Entomological Society of America Annual Meeting, Vancouver, BC.

INVITED TALKS

2026	<i>What happens when bees lie?</i> Kibbutz Gezer Environmental Week TED Talk Series, Kibbutz Gezer, Israel.
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2024	Zines in science communication and teaching . Interdisciplinary Science Communication Seminar, Boston University, Boston, MA (virtual).
2022	ArthroZINE: Mini magazines for collective learning and sharing . Entomological Society of America Annual Meeting, Vancouver, BC.
2022	<i>Costs and benefits of parental care in a non-model arthropod system</i> . Department of Entomology and Wildlife Seminar, University of Delaware.
2019	<i>Decoded dances reveal seasonal transition from broadly distributed to spatially discrete foraging in Philadelphia's urban landscape</i> . Protecting Pollinators in Urban Landscapes Conference, Cincinnati, OH.
2018	<i>Reliability and the waggle dance</i> . Hebrew University of Jerusalem Beekeepers Association Spring Conference, Rehovot, Israel.

SELECTED TALKS & POSTERS

2024	Parental care and brain investment in a non-model arthropod. Society for Integrative & Comparative Biology (SICB) Annual Meeting, Seattle, WA.
2023	Neuroanatomy and development in a terrestrial caregiving arthropod. Entomological Society of America Annual Meeting, National Harbor, DC.
2023	Neuroanatomy and development in a terrestrial caregiving arthropod. Ecology, Evolution & Earth Systems Department Seminar, Drexel University.
2022	The parental isopod brain. Ecology, Evolution & Earth Systems Department Seminar, Drexel University.
2022	Behavior-coupled quantification of brain plasticity in a social isopod. Ecology, Evolution & Earth Systems Research Day, Drexel University.
2022	Behavior-coupled quantification of brain plasticity in a social isopod. American Association for the Advancement of Science (AAAS) Annual Meeting (virtual poster).
2021	The parental brain of a desert isopod. Entomological Society of America Annual Meeting (virtual).
2020	Social behavior and brain development: Does biparental care affect brain tissue investment in a desert isopod? Ecology, Evolution & Earth Systems Department Seminar, Drexel University.
2020	Why is visual art valuable in science? Organismal biology, ecology and evolution seminar, Drexel University.
2020	Dig, draw, repeat: Illustrating arthropod behavior at the beginning of a research project. Animal Behavior Society Virtual Conference.
2020	Digging holes in the Negev Desert: a neuroanatomical study of a social and terrestrial crustacean. Office of Global Engagement's 5th Annual International Research Showcase, Drexel University.
2019	Seasonal variation in honey bee foraging behavior across Philadelphia's urban landscape. Annual Biology Department Symposium, Binghamton University.
2019	Decoded honey bee dances reveal seasonal transition from broadly distributed to spatially discrete foraging in Philadelphia's urban landscape. The 56th Meeting of the Zoological Society of Israel, Jerusalem, Israel.
2018	Reliability and the waggle dance: Honest bees dance more and attract more followers than dishonest bees. Entomological Society of America, Canada and BC Joint Meeting, Vancouver, BC.
2017	Inconsistencies of the waggle dance: How do recruits react to a lying dancer? The 35th Annual Entomological Society of Israel Meeting, Jerusalem, Israel.

MENTORSHIP

Oct. 2025-July 2026	Talya Maor Honey bee behavior (stop signals and the dance language). Amirim honors student.
2022-present	Natalie Richards Neuroethology, Drexel University.
2020	Daouda Njie Scientific illustration and animal behavior, Drexel University.
2019	Margaret Denbleyker Animal behavior, University of Pennsylvania.
2015-2017	Shiran Yona Animal behavior and field methods, The Hebrew University of Jerusalem.

PUBLIC COVERAGE OF RESEARCH

2026	Hebrew University / EurekAlert news release: Honeybees adjust their dances based on information reliability.
2026	Agriculture HUJI Instagram post about honey bee dance information reliability research.
2026	Honey bee dance research Instagram reel.
2022	Kan 11, שכר וכזב - פרק 4 למה ככה? . MSc thesis research featured at 34:33.
2021	Stein Fellowship Desert Research Blog , written by Karmi.
2021	Spring BEES Dept. Zine / Green Verses coverage: New Publication Celebrates the Intersection of the Arts and Sciences.
2020	Insectes Sociaux Online Journal: Can desert ants take the heat?
2020	Great Lakes Echo interview: Seeking the building blocks of pollinator conservation.
2012	The Source, Oberlin College: Teaching Garden Takes Root.

SCIENCE OUTREACH & COMMUNICATION

2024	<i>Architectural Sociality: Wasp Abodes and Roly Poly Labyrinths</i> . BugFest, Academy of Natural Sciences of Drexel University.
2022	Green Verses BEES Zine in-person collage event . Invisible World of Water exhibit, Academy of Natural Sciences of Drexel University.
2022	Isopods are aMAZEing . BugFest, Academy of Natural Sciences of Drexel University.
2020	<i>My Adventures in Ecology</i> . Women in Natural Sciences (WINS), Drexel University.
2020	<i>Urban bees activity</i> . MLK Day Celebration, Academy of Natural Sciences of Drexel University.
2019	<i>Beekeepers Guild and Pollinator Project Demo</i> . Philadelphia Science Festival.
2018	<i>Observation hive demo</i> . Philadelphia Honey Festival.
2018	<i>Life and nature skills workshop</i> . Judith Creed Homes for Adult Independence.

ZINES & MINI MAGAZINES

Nov. 2022	ArthroZine: Issue 1 . Entomological Society Annual Meeting arts mini magazine. Project website . Co-designed the workshop and collaboratively edited the zine with Dr. Grace Savoy-Burke .
Winter 2022	GREEN VERSES: Issue 3, Don't Sweat the Small Stuff . Drexel Ecology, Evolution & Earth Systems.
Fall 2021	GREEN VERSES: Issue 2, TEXTURES . Drexel Ecology, Evolution & Earth Systems.
Spring 2021	GREEN VERSES: Issue 1 . Drexel Ecology, Evolution & Earth Systems.

Green Verses began as an idea by Karmi and Virginia Caponera; they organized, edited, and assembled the physical zines during COVID. Dr. Samantha Giancarli also organized and edited issues 2 and 3. [Read coverage](#).

AFFILIATIONS

2014-2017; 2025-present	Entomological Society of Israel
2023-present	The Crustacean Society
2023-present	Society for Integrative & Comparative Biology (SICB)
2020-present	International Union for the Study of Social Insects (IUSSI)
2019-present	Animal Behavior Society
2017-present	Entomological Society of America
2019-2020	Israel Zoological Society

2019-2020 [Fairmount Park Conservancy](#)
2017-2020 [Philadelphia Beekeepers Guild](#)

ADDITIONAL TRAINING & OTHER EMPLOYMENT

2011 [Sustainability and Environmental Action](#) intensive semester abroad, School for International Training, Australia.

2011 **Wildlife Rehabilitation and Permaculture Intern**, WWOOF NZ, The Animal Sanctuary & [Wilderland Sustainable Living](#), New Zealand.

2012-2013 **Exhibit Manager - Live Butterfly Exhibit**, [Academy of Natural Sciences of Drexel University](#), Department of Education.

2012-2013 **Conservation Educator - Nightflight**, [Philadelphia Zoo](#), Department of Education.

2012 & 2013 **Ropes Course and Camping Trip Manager**, [Camp Galil](#).