

Hannah K. Levenson, PhD

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EDUCATION

Ph.D., North Carolina State University, 2021

Entomology (Behavior, Ecology, Evolution & Systematics)

Biology (Ecology & Evolution)

B.S., North Carolina State University, 2015

Environmental Technology & Management

B.A., North Carolina State University, 2015

Design Studies, *Magna Cum Laude*

Minor - Environmental Studies

EXPERIENCE

RESEARCH SCHOLAR

Oct 2024 - Present

Specialty Crops Integrated Pest and Pollinator Management Lab (SCIPPM),

North Carolina State University, Raleigh NC

Principle Investigator of the SCIPPM lab. Responsible for research on Integrated Pest and Pollinator Management in specialty crops, particularly improving the management of *Drosophila suzukii* and protecting beneficial organisms – including pollinators and natural enemies – in human modified landscapes.

POSTDOCTORAL RESEARCH SCHOLAR

June 2021 – Sep 2024

Specialty Crops Integrated Pest and Pollinator Management Lab (SCIPPM),

North Carolina State University, Raleigh NC

Lead researcher for the SCIPPM lab and co-PI of a USDA SCRI grant. Conducting collaborative work across 11 different projects, which include 5 public agencies, 12 universities, 2 nonprofit organizations, and 9 commercial farmers.

GRADUATE RESEARCH ASSOCIATE

July 2017 – May 2021

NCSU Apiculture Program, North Carolina State University, Raleigh NC

Designed and implemented multi-faceted projects evaluating the complex relationship of planted pollinator habitat as a conservation tool on bee species populations, bee health, and crop yield. Coordinated logistics and executed pollinator field survey research over 4 years across 16 NCDA&CS and NCSU Experimental Agricultural Research Stations.

PRE-GRADUATE DEGREE EXPERIENCES

Field Research Technician at North Carolina State University

Feb 2016 – July 2017

Designed and conducted an independent research project – *Disease interactions between native, wild, and honey bees in northern Perú* – with 5 local beekeepers, 6 Peace Corps Volunteers, and 2 researchers at La Universidad Nacional Toribio Rodríguez de Mendoza de Amazonas in Chachapoyas, Perú

Biology Technician – Wildlife Toxicology at Smithers Viscient LLC Feb 2015 – Aug 2015

Collected samples from crops and honey bee hives; Conducted Digital Colony Condition Assessments to evaluate colony health in NC, CA, and SD. Assisted in the management of 300+ honey bee hives.

Field Assistant at North Carolina State University

May 2014 – Aug 2014

Constructed 16 artificial patch reefs in The Abacos, The Bahamas. Performed fish and seagrass surveys, collected samples of seagrass, ocean water, mangrove leaves, and sediment. Assisted teaching a week-long sea creature identification course.

MEMBERSHIPS

Entomological Society of America	2018 – Present
North Carolina Pollinator Conservation Alliance	2019 – Present
North American Raspberry and Blackberry Association	2024 – Present

HONORS AND AWARDS

AWARDS

Entomological Society of America Early Career Professional Recognition Symposium, November 2023

North Carolina State University Department of Entomology and Plant Pathology Excellence in Entomology Award, June 2021

North Carolina Entomological Society 3-Minute Thesis Competition – 1st Place, October 2020

North Carolina State Beekeepers Association's J.T. Ambrose Student Award, July 2020

North Carolina State University College of Agriculture and Life Sciences Research Foundation Competition – 2nd Place, March 2020

North Carolina Entomological Society Outstanding Ph.D. Student, October 2019

National Science Foundation Graduate Research Fellowship Program – Honorable Mention, October 2019

Southern Sustainable Agriculture Research and Education (SARE) Graduate Student Grant (\$16,000), August 2019

North Carolina State University Entomology Graduate Student Symposium 10-Minute Presentation 1st Place, March 2019

Syngenta Bee Research Award (\$25,000), December 2018

North Carolina Entomological Society Outstanding Masters Student, October 2018

North Carolina State University Biology Research Award (\$1,500), March 2018

TRAVEL GRANTS AND FELLOWSHIPS

Entomological Society of America Travel Award (\$500), November 2023

North Carolina State University Impact Scholar (\$1,000), January 2022

North Carolina State University STEM Externship Fellow (\$1,500), May 2021

North Carolina State University Graduate Student Association Travel Award (\$1,500), April 2020

North Carolina State University Center for Environmental Farming Systems Graduate Fellow (\$10,000), July 2019

International Pollinator Conference Travel Award (\$500), March 2019

Garden Club of America's Centennial Pollinator Fellowship (\$4,000), March 2019
North Carolina Entomological Society Travel Award (\$250), October 2018
North Carolina State University Graduate Student Association Travel Award (\$500),
April 2018

RESEARCH ACTIVITIES

RESEARCH INTERESTS

I am a community ecologist broadly interested in investigating how humans impact the environment and exploring ways to mitigate those impacts. To do this, I research pest and beneficial insect communities (including pollinators and natural enemies) in human modified environments (mostly agricultural settings). Some of my research highlights include:

- Improving spotted wing drosophila management in berry crops
- Surveying SWD parasitoid species across North Carolina
- Evaluating the establishment of a classical biological control agent of SWD
- Surveying pollinator communities in specialty crops
- Exploring nesting habitat requirements of wild bees in blackberries and blueberries
- Documenting the impacts of garden maintenance on overwintering stem-nesting bees
- Evaluating the impacts of land use conversion to solar on pollinators
- Creating an expert designed pollinator habitat plan and installing the habitat on small farms across North Carolina

FUNDED RESEARCH GRANTS

USDA Rapid Response Grant: Restoring wild pollinator habitat in agriculture after a thousand-year flooding event in Western North Carolina, March 2025 – Feb. 2026
Total Award \$300,000

PI: **Dr. Hannah Levenson**, Co-PI: Metz

Provide educational materials, seeds, and soil testing to growers affected by the flood and evaluate impacts to pollinator populations.

*SSARE On-Farm Research Grant**: Designing Ecologically Beneficial Habitat for Diverse Farming Systems, April 2024 – March 2026

Total Award \$30,000

PI: Dr. Angel Cruz

Creating an expert designed pollinator habitat plan, installing on NC Farms, and evaluating the benefit to pollinators.

*USDA CPPM Grant**: Fruit Sampling to Reduce Pesticide Inputs in the Era of Spotted-Wing Drosophila, Sep. 2023 – Aug. 2025

Total Award \$324,904, NCSU Subaward \$70,386

PI: Dr. Rufus Isaacs, Co-PIs: Walton, Burrack, Walgenbach

Developing decision tree management centered around fruit sampling for berry growers to improve SWD management and evaluating impacts on SWD parasitoids.

USDA SCRI Grant: Moving from Crisis Response to Long-Term Integrated Management of SWD: A Keystone Pest of Fruit Crops in the United States, Sep. 2020 – Aug. 2025
Total Award \$5,355,186, NCSU Subaward \$419,621

Lead PD: Dr. Ash Sial, Co-PIs: Burrack, Walton, **Levenson**, Walgenbach, Loeb, Hoelmer, Daane, Rodriguez-Saona, Chiu, Isaacs, Beers, Gallardo, Zalom, Gomez, Wang, Northfield, Hoheisel, Kelsey, Fanning

NC Blueberry Council: Promoting a Holistic Approach to Pollinating Blueberries, Feb. 2023 – April 2024*

Total Award \$10,253

PI: Dr. Elsa Youngsteadt, Co-PI: Tarpy

Develop a knowledge base of wild bees on NC blueberry farms including nesting habitat and evaluating the potential use of augmented nesting habitat.

NC Blueberry Council: Promoting a Holistic Approach to Pollinating Blueberries, Feb. 2023 – April 2024*

Total Award \$11,278

PI: Dr. Elsa Youngsteadt, Co-PI: Tarpy

Develop a knowledge base of wild bees on NC blueberry farms including nesting habitat and evaluating the potential use of augmented nesting habitat.

*Not listed as PI due to institutional policy, but contributed significantly to writing and conducting of research to the level of co-PI

COMPETITIVE RESEARCH GRANTS IN REVIEW

USDA SCRI Grant: Sticking the Landing: Rebuilding IPM for Fruit Production Systems in the Era of SWD, 2026 – 2029

Total Award \$6,800,000, NCSU Subaward \$480,000

Lead PD: Dr. Vaughn Walton; Co-PDs: Sial, Isaacs, Chiu; Co-PIs: Zalom, Daane, Rodriguez-Saona, Beers, Nottingham, Gomez, Fanning, Hogg, Beal, **Levenson**, Burrack, Wang, Wilson, Lee, Gardener, Mermer, Formiga.

USDA NIFA Grant: Implementing Standardized Protocols to Monitor Key Agricultural Pollinators and Identify Drivers of Health, 2026 – 2029

Total Award \$750,000, NCSU Subaward \$120,000

Lead PD: Dr. Margarita López-Urbe; Co-PIs: Isaacs, Williams, **Levenson**, Turley

USDA NIFA Grant: Pollinator Protection Through Time, Testing Our Impact, 2026 – 2029

Total Award \$750,000

Lead PD: Dr. **Hannah K. Levenson**; Co-PIs: Powell, Tarpy

PEER REVIEWED PUBLICATIONS

16. Strange, J.P., López-Urbe, M.M., Whiteman, L., Danforth, B.N., Jha, S., **Levenson, H.K.**, Du Clos, B., Koch, J.B.U., and Woodard, S.H. (2025) Standardized protocol for collecting bee samples for parasite and pathogen data. *Journal of Melittology*, 123(8): 182-194. doi: 10.17161/jom.vi123.22598.

15. López-Urbe, M.M., Strange, J.P., Whiteman, L., Danforth, B.N., Jha, S., Branstetter, M.G., Koch, J.B.U., **Levenson, H.K.**, Du Clos, B., and Woodard, S.H. (2025) Standardized protocol for collecting bee samples to generate molecular data. *Journal of Melittology*, 124(7): 163-181. doi: 10.17161/jom.vi123.22596.

14. Cariveau, D.P.*, Hung, K.L.J.*, Inouye, D.W., Williams, N.M., Burns, C.T., Lane, I., Irwin, R.E., **Levenson, H.K.**, Du Clos, B., and Woodard, S.H. (2025) Standardized protocols for collecting data on bee-flower interactions and the associated floral community. *Journal of Melittology*, 123(5): 104-138. doi: 10.17161/jom.vi123.23861.
13. **Levenson, H.K.***, Carril, O.M.*, Turley, N.E., Maffei, C., LeBuhn, G., Griswold, T., Williams, N.M., Hung, K.L.J., Irwin, R.E., Du Clos, B., and Woodard, S.H. (2025) Standardized protocol for collecting community-level bee data. *Journal of Melittology*, 123(4): 77-103. doi: 10.17161/JOM.VI123.22649.
12. Du Clos, B., Seltsmann, K.C., Turley, N.E., Maffei, C., Tucker, E.M., Lane, I., **Levenson, H.K.**, and Woodard, S.H. (2025) Improving the standardization of wild bee occurrence data: towards a formal wild bee data standard. *Journal of Melittology*, 123(3): 17-77. doi: 10.17161/jom.vi123.23163.
11. **Levenson, H.K.**, Du Clos, B., Smith, T.A., Jepsen, S., Everett, J.G., Williams, N.W., and Woodard, S.H. (2025) A call for standardization in wild bee data collection and curation. *Journal of Melittology*, 123(2): 4-16. doi: 10.17161/jom.vi123.22533.
10. Beckwith, K.M., Burrack, H.J., Flanagan, M., Wiggins, G., and **Levenson, H.K.** (2025) Temporal and spatial distribution of *Leptopilina* (Hymenoptera: Figitidae) species in Southeastern United States blackberries. *Journal of Economic Entomology*. doi: 10.1093/jee/toaf152.
9. **Levenson, H.K.**, Van Timmeren, S., Babu, A., Isaacs, R., Sial, A.A., Walton, Vaughn, and Burrack, H.J. (2025) Crop edge sampling and early life stage detection for improved monitoring of spotted-wing drosophila (*Drosophila suzukii*) in berry crops. *Journal of Economic Entomology*. doi: 10.1093/jee/toaf122.
8. **Levenson, H.K.**, Tembroke, L., Mollet, K., Zink, F., and Tarpy, D.R. (2025) Redefining the geographic distribution of two cryptic *Halictus* (Hymenoptera: Halictidae) species in the eastern United States. *Ecology and Evolution*, 15: e71570. doi: 10.1002/ece3.71570.
7. Garipey, T.D., Abram, P.K., Adams, C., Beal, D., Beers, E., Beetle, J., Biddinger, D., Brind'Amour, G., Bruin, A., Buffington, M., Burrack, H., Daane, K.M., Demchak, K., Fanning, P., Gillett, A., Hamby, K., Hoelmer, K., Hogg, B., Isaacs, R., Johnson, B., Lee, J.C., **Levenson, H.K.**, Loeb, G., Lovero, A., Milnes, J.M., Park, K.R., Prade, P., Regan, K., Renkema, J.M., Rodriguez-Saona, C., Neupane, S., Jones, C., Sial, A., Smythman, P., Stout, A., Van Timmeren, S., Walton, V.M., Wilson, J.K., & Wang, X. (2024) Widespread establishment of adventive populations of *Leptopilina japonica* (Hymenoptera, Figitidae) in North America and development of a multiplex PCR assay to identify key parasitoids of *Drosophila suzukii* (Diptera, Drosophilidae). *NeoBiota*, 93: 63-90. doi: 10.3897/neobiota.93.121219
6. **Levenson, H.K.** & Burrack, H.J. (2024) Pollinator communities in a blackberry cropping system under intense pest management. *Acta Horticulturae*, 1388: 197-200
5. **Levenson, H.K.**, Metz, B.N., & Tarpy, D.R. (2024) Effects of study design parameters on estimates of bee abundance and richness in agroecosystems: a meta-analysis. *Annals of the ESA*. doi: 10.1093/aesa/saae001
4. Ruzi, S.A., Youngsteadt, E., Cherveney, A., Kettenback, J., **Levenson, H.K.**, Seth Carley, D., Collazo, J., & Irwin, R.E. (2023) Bee species richness varies through time in an urbanizing landscape of the southeastern USA. *Global Change Biology*. doi: 10.1111/gcb.17060

3. **Levenson, H.K.** & Tarpy, D.R. (2023) Planted pollinator habitat in agroecosystems: how does the pollinator community respond? *Frontiers in Ecology and Evolution*. 11.1060834. doi: 10.339/fevo.2023.1060834
2. **Levenson, H.K.** & Tarpy, D.R. (2022) Effects of planted pollinator habitat on pathogen prevalence and interspecific detection between bee species. *Scientific Reports*. 12.7806. doi: 10.1038/s41598-022-117343
1. **Levenson, H.K.**, Sharp, A.E., & Tarpy, D.R. (2022) Evaluating the impact of increased pollinator habitat on bee visitation and yield metrics in soybean crops. *Agriculture, Ecosystems & Environment*. 331:10701. doi: 10.1016/j.agee.2022.10701

PEER REVIEWED PUBLICATIONS IN REVIEW

1. Rooney, R.N., Tarpy, D.R., and **Levenson, H.K.** How different bee (Hymenoptera: Apoidea) taxa in pollinator communities utilize planted pollinator habitat. *Ethology Ecology & Evolution*.
2. **Levenson, H.K.**, Glen, C., Rose, L., and Youngsteadt, E. To provide pollinator nesting habitat, cut dead perennial stems in their first winter. *Insect Conservation and Diversity*.

PEER REVIEWED PUBLICATIONS IN PREP

1. Todd, L.E., Suchoff, D.H., and **Levenson, H.K.** A survey of beneficial insects in southeastern US sesame (*Sesamum indicum* L.) fields. *TARGET: Journal of Environmental Entomology*.
2. Beckwith, K.M., Rose, L., and **Levenson, H.K.** Distribution of the invasive *Drosophila suzukii* (Diptera: Drosophilidae) and a newly established parasitoid predator, *Leptopilina japonica* (Hymenoptera: Figitidae), outside of commercial agricultural fields. *Journal of Integrated Pest Management*.
3. Zhu, G., Wang, X., Beers, E.H., Rodriguez-Saona, C., Collins, J., Walsh, D.B., Smytheman, P., Diehl, B., Nottingham, L.B., Demchak, K., Hamby, K.A., Daane, K.M., Brown, J.T., Hogg, B.N., **Levenson, H.K.**, Lee, J.C., Walton, V.M., Ragozzino, M., and Crowder, D.W. When and where to release parasitoids? Guiding biological control with habitat and phenology predictions.

OTHER PUBLICATIONS

Du Clos, B., Seltmann, K.C., Turley, N.E., Maffei, C., Tucker, E.M., Lane, I., **Levenson, H.K.**, and Woodard, S.H. (2024) Templates for The Wild Bee Data Standard (1.0.0). Zenodo. doi: 10.5281/zenodo.14187862.

INVITED SEMINAR AND KEYNOTE PRESENTATIONS

- Levenson, H.K.** (2025) Ecology in Action: Applying foundational research to agricultural challenges. NCSU DEPP Seminar, Raleigh, NC.
- Levenson, H.K.** (2024) Applied Insect Ecology in a Diverse Agroecosystem: From Row Crops to Specialty Crops. UC Riverside Entomology Seminar, Riverside, CA.
- Levenson, H.K.** (2023) Applied pollination ecology in a diverse agroecosystem: from row crops to specialty crops. MSU Entomology Seminar, East Lansing, MI.
- Levenson, H.K.** (2020) Pollinator communities across North Carolina: what their

populations look like and how we can support them. Montgomery Community College Pollinator Conference, Troy, NC. *keynote speaker

INVITED SCIENTIFIC PRESENTATIONS

- Levenson, H.K.** (2025) Using interdisciplinary research and stakeholder engagement to rebuild IPM of a keystone pest of fruit crops, *Drosophila suzukii*. Entomological Society of America Annual Meeting, Portland, OR.
- Levenson, H.K.**, Tarpy, D.R., and Youngsteadt, E. (2024) Identifying and creating on-farm nesting habitat for blueberry specialist pollinators. Entomological Society of America Annual Meeting, Phoenix, AZ.
- Levenson, H.K.** (2024) Between two thorns: Unveiling the hidden ecosystem within blackberry fields. Entomological Society of America Southeastern Branch Meeting, Augusta, GA.
- Levenson, H.K.** (2024) Using applied pollinator ecology to support pollinator populations. Mason Pharr Symposium, Raleigh, NC.
- Levenson, H.K.** (2023) Applied Pollinator Ecology in a Diverse Agroecosystem: From Row Crops to Specialty Crops. ESA Early Career Professionals Symposium, National Harbor, MD.
- Levenson, H.K.**, Burrack, H.J., Isaacs, R., Walton, V.M., and Van Timmeren, S. (2023) Improvements in spotted-wing drosophila monitoring and management in berry crops. Entomological Society of America Southeastern Branch Meeting, Little Rock, AK.
- Levenson, H.K.** (2022) Pollinator communities across North Carolina: from the individual to the agroecosystem. Entomological Society of America Southeastern Branch Meeting, San Juan, PR.
- Levenson, H.K.** (2020) The Who, What, and How of Native Bees. NC Vegetation Management Association's Annual Meeting, Virtual.
- Levenson, H.K.** and Tarpy, D.R.* (2020) Native bee communities across North Carolina: from the individual to the agroecosystem. Entomological Society of American Annual Meeting, Virtual. *presenting author
- Levenson, H.K.** and Tarpy, D.R. (2019) Native bee communities across North Carolina: from the individual to the agroecosystem. North Carolina Entomological Society, Raleigh, NC. *award presentation
- Levenson, H.K.** and Tarpy, D.R. (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. International Pollinator Conference, Davis, CA.
- Levenson, H.K.** and Tarpy, D.R. (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. NCSU Graduate Research Symposium, Raleigh, NC.
- Levenson, H.K.** and Tarpy, D.R. (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Entomological Society of American Eastern Branch Meeting, Blacksburg, VA.
- Levenson, H.K.** and Tarpy, D.R. (2018) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Entomological Society of American Southeastern Branch Meeting, Orlando, FL.

CONTRIBUTED SCIENTIFIC PRESENTATIONS

- Levenson, H.K.** and Du Close, B. (2023) Tiered Systems for Collecting Bee Data. US National Native Bee Monitoring RCN Sampling methods Workshop, Gibraltar, OH.
- Levenson, H.K.** and Burrack, H.J. (2023) Pollinator communities in a blackberry cropping system under intense management of an invasive pest. ISHS Rubus and Ribes, Portland, OR.
- Levenson, H.K.** and Burrack, H.J. (2022) Enabling IPPM Strategies in Caneberries. Entomological Society of America Annual Meeting, Vancouver, CA.
- Levenson, H.K.** (2022) Considerations for studying bees in agroecosystems. ESA Sampling Method Development for the US National Native Bee Monitoring RCN, Vancouver, CA.
- Levenson, H.K.** and Burrack, H.J. (2022) North Carolina Update 2021. WERA1021: Spotted Wing Drosophila Biology, Ecology, and Management Annual Meeting, Virtual.
- Levenson, H.K.** (2020) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. NCPA Annual Meeting, Virtual.
- Levenson, H.K.**, Sharp, A.E. and Tarpy, D.R. (2020) Evaluating the impacts of augmented pollinator habitat on surrounding cropping systems. Entomological Society of American Annual Meeting, Virtual.
- Levenson, H.K.** and Tarpy, D.R. (2020) Evaluating the impact of augmented pollinator habitat on surrounding cropping systems. Southern Appalachian Honey Bee Research Consortium Annual Meeting, Boone, NC.
- Levenson, H.K.** and Tarpy, D.R. (2019) Native bee communities across North Carolina: from the individual to the agroecosystem. NCDA Superintendent Annual Meeting, Raleigh, NC.
- Levenson, H.K.** and Tarpy, D.R. (2019) Evaluating the connectedness of pollinator networks between augmented pollinator habitat and adjacent cropping systems. Entomological Society of American Annual Meeting, St. Louis, MO.
- Levenson, H.K.** and Tarpy, D.R. (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. CEFS Board Meeting, Raleigh, NC.
- Levenson, H.K.** and Tarpy, D.R. (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. NCSU Entomology Student Research Symposium, Raleigh, NC.
- Levenson, H.K.** and Tarpy, D.R. (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Southern Appalachian Honey Bee Research Consortium Annual Meeting, Charlotte, NC.
- Levenson, H.K.** and Tarpy, D.R. (2018) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Entomological Society of American Annual Meeting, Vancouver, CA.
- Levenson, H.K.** and Tarpy, D.R. (2018) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Ecological Society of America Annual Meeting, New Orleans, LA.
- Levenson, H.K.** and Tarpy, D.R. (2018) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. NCSU Entomology Student Research Symposium, Raleigh, NC.

- Levenson, H.K.**, Goethe, J.K. and Tarpy, D.R. (2018) Disease interactions between native bees, wild bees, and honey bees in northern Peru. Southern Appalachian Honey Bee Research Consortium Annual Meeting, Wake Forest, NC.
- Levenson, H.K.** and Tarpy, D.R. (2017) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. NCDA Superintendent Annual Meeting, Raleigh, NC.
- Levenson, H.K.** and Tarpy, D.R. (2017) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Southern Appalachian Honey Bee Research Consortium Annual Meeting, Greensboro, NC.
- Levenson, H.K.** and Tarpy, D.R. (2016) Pollinator habitat study. NCDA Superintendent Annual Meeting, Raleigh, NC.

EXTENSION ACTIVITIES (Number of Contacts: 95,747)

PEER REVIEWED EXTENSION PUBLICATIONS

- Levenson, H.** and Youngsteadt, E. (2019) The Bees of North Carolina: An Identification Guide. *NCSU Extension*. <https://uncpress.org/book/9781469659022/the-bees-of-north-carolina/> [66,038 page views]

AUTHORED EXTENSION FACT SHEETS

- Youngsteadt, E., **Levenson, H.**, Rose, L., and Glen, C. (2024) Garden Cleanup for Pollinators: Trim Perennial Stems in Their First Winter. *NC State Extension Publications*. <https://content.ces.ncsu.edu/garden-cleanup-for-pollinators-trim-perennial-stems-in-their-first-winter> [4024 page views]
- Levenson, H.** and Walgenbach, J. (2022) What the 2022 Spotted Lanternfly Detection Means for NC Grape Growers. *NC Cooperative Extension Fact Sheet*. https://grapes.ces.ncsu.edu/wp-content/uploads/2022/09/NC-SLF-Ext-Doc_Final.pdf?fwd=no [255 page views]

MANAGED EXTENSION FACT SHEETS

- Burrack, H. (2014) Spotted Wing Drosophila in Strawberries. *NC State Extension Publications*. <https://content.ces.ncsu.edu/spotted-wing-drosophila-in-strawberries>
- Burrack, H. (2014) Other Drosophila Species in Strawberries. *NC State Extension Publications*. <https://content.ces.ncsu.edu/other-drosophila-species-in-strawberries>

AUTHORED EXTENSION POSTS

- Levenson, H.** (2025) Ground Nesting Bees – What to Look for and What Species to Expect. *NC State Extension*. go.ncsu.edu/readext?1059447 [7764 page views]
- Youngsteadt, E., **Levenson, H.** (2025) Winter Is a Great Time to Tidy Up Perennial Stems for Pollinator Habitat. *NC State Extension*. go.ncsu.edu/readext?1057279 [476 page views]

OTHER EXTENSION PUBLICATIONS

- Belanger, L., Dovey, C., Lopez, L., Addison, T., Archambault, M., Arthurs, S., Bael, M., Beggs, C., Benavides, L., Best, A., Boyd, N., Brannen, P., Cline, W., Cook, J., Corahan, N., Davis, V., Driver, J., Dupree, D., Ehils, D., Elwakil, W., Fajardo, G., Flanagan, R., Freeman, M., Geyer, P., Hammond, J., Harmon, C., Holliman, C., Johnson, P., Jones,

W., Kellam, K., Lahiri, S., Lee, J., **Levenson, H.**, Oliveira, C., Poythiesse, D., Poythiesse, T., Renz, W., Richardson, W., Rouse, B., Rubio, Z., Samtani, J., Schnabel, G., Schoeller, E., Sikora, E., Smith, D., Snipes, Z., Stacey, H., Torres, E., Warbington, L., Webb, W., White, J., & Wrenn, A. (2024) Pest management strategic plan for strawberry in North Carolina, Virginia, South Carolina, Georgia, and Florida. *IPM Centers*.
https://ipmdata.ipmcenters.org/documents/pmsps/FLGANCSVCVAstrawberryPMSP2024_4.15.2025.pdf

WEBSITES

Youngsteadt, E., **Levenson, H.**, & Adams, N. Hymenoptera of North Carolina. *North Carolina Biodiversity Project*.

<https://auth1.dpr.ncparks.gov/hymenoptera/index.php>

Irwin, R., Keller, J., **Levenson, H.**, Seth Carley, D., Tarpy, D., & Youngsteadt, E. Pollinators. NC State Extension. <https://pollinators.ces.ncsu.edu/>

INVITED FIELD DAYS AND WORKSHOPS

Levenson, H.K. (2025) NC Pollinators and Blueberry Pollination. Blueberry Festival, Castle Hayne, NC. [61 contacts]

Levenson, H.K. (2024) Identification of Native Bees. NCSU Apiculture Program's BEES Academy, Wilson, NC. [34 contacts]

Levenson, H.K. (2024) Pollinator Identification Workshop. NC Wildlife Federation, Durham, NC. [34 contacts]

Levenson, H.K. (2024) Blueberry Pollination and Improved SWD Management. Blueberry Field Day, Castle Hayne, NC. [30 contacts]

Levenson, H.K. (2024) Panel member for the Farm Bureau's workshop on Native Plants in the NC Nursery Industry. JC Raulston Arboretum, Raleigh, NC. [75 contacts]

Levenson, H.K. (2023) Pollinator Identification Workshop. NC Wildlife Federation, Durham, NC. [12 contacts]

CONTRIBUTED FIELD DAYS AND WORKSHOPS

Levenson, H.K. (2025) Bee Field Collection and Identification. NCPCA Pollinator Field Day, Raleigh, NC. [30 contacts]

Levenson, H.K. and Youngsteadt, E. (2024) Bee Biology and Identification Workshop. NCSU, Raleigh, NC. [19 contacts]

Levenson, H.K. (2023) Bee Field Collection and Identification. NCPCA Pollinator Field Day, Mills River, NC. [70 contacts]

Levenson, H.K. (2022) Bee Field Collection and Identification. NCPCA Pollinator Field Day, Kinston, NC. [40 contacts]

Youngsteadt, E. and **Levenson, H.K.** (2021) Native Bee Diversity and Identification. NCPCA Pollinator Field Day, Virtual. [100 contacts]

Levenson, H.K. (2021) Identification of Native Bees. NCSU Apiculture Program's BEES Academy, Monroe, NC. [20 contacts]

Levenson, H.K. (2020) Identification of Native Bees. NCSU Apiculture Program's BEES Academy, New Bern, NC. [45 contacts]

Levenson, H.K. (2019) Identification of Native Bees. NCSU Apiculture Program's BEES Academy, Bolivia, NC. [20 contacts]

- Levenson, H.K.** (2019) Identification of Native Bees. NCSU Apiculture Program's BEES Academy, Pittsboro, NC. [20 contacts]
- Levenson, H.K.,** Favre, M. and Youngsteadt, E. (2019) Mini-Bee Identification Workshop. NCPCA Pollinator Field Day, Raleigh, NC. [20 contacts]
- Levenson, H.K.** (2019) Bee Field Collection and Identification. NCPCA Pollinator Field Day, Raleigh, NC. [60 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2019) Bee Biology and Identification Workshop. NCSU, Raleigh, NC. [20 contacts]
- Levenson, H.K.** (2018) Bee Field Collection and Identification. NCPCA Pollinator Field Day, Salisbury, NC. [100 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2018) Bee Biology and Identification Workshop. NCSU, Raleigh, NC. [17 contacts]

INVITED EXTENSION PRESENTATIONS

- Levenson, H.K.** (2025) Using pollinator ecology to support pollinator populations. Conserving Carolina, Mill Spring, NC. [20 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2025) Managing perennial stems for overwintering pollinators. Extension Master Gardener volunteers of Wake County, Virtual. [82 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2025) Managing perennial stems for overwintering pollinators. Extension Master Gardener volunteers of Buncombe County, Virtual. [51 contacts]
- Levenson, H.K.** (2025) Bee Identification. NC Cooperative Extension, The Great Southeast Pollinator Census, Virtual. [101 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2025) Managing perennial stems for overwintering pollinators. Science by the Slice: Scientific American, Raleigh, NC. [18 contacts]
- Levenson, H.K.** (2025) Updated IPM Program for SWD. North Carolina Caneberry Association Annual Meeting, Concord, NC. [32 contacts]
- Levenson, H.K.,** Tarpy, D.R., and Youngsteadt, E. (2025) Promoting a holistic approach to pollinating blueberries. NC Blueberry Council, Fayetteville, NC. [105 contacts]
- Levenson, H.K.** (2024) Spotted wing drosophila and your fruits: identification, detection, prevention, treatment. Lee County Extension, Virtual. [21 contacts]
- Youngsteadt, E., and **Levenson, H.K.** (2024) Creating nesting and overwintering habitat for native bees. EMGV College, Raleigh, NC. [19 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2024) Managing perennial stems for overwintering pollinators. NC Cooperative Extension, The Great Southeast Pollinator Census, Virtual. [322 contacts]
- Levenson, H.K.** and Youngsteadt, E. (2024) Managing perennial stems for overwintering pollinators. Extension Master Gardener Volunteer Continuing Education Webinar, Virtual. [196 contacts]
- Levenson, H.K.** (2024) The Who, What, and How of Native Bees. Nash County Master Gardener Pollinator Symposium, Nashville, NC. [85 contacts]
- Levenson, H.K.** (2024) North Carolina Bumble Bees: Biology, Diversity, Threats. Chatham Conservation Partnership, Virtual. [326 contacts]

Levenson, H.K. (2024) Using applied pollinator ecology to support pollinator populations. Bedford Club, Raleigh, NC. [28 contacts]

Levenson, H.K., Tarpy, D.T., Youngsteadt, E. (2024) Promoting a holistic approach to pollinating blueberries. NC Bladen County Blueberry Grower Meeting, Elizabethtown, NC. [64 contacts]

Levenson, H.K. (2023) Bee Field Collection and Identification. NC Cooperative Extension, The Great Southeast Pollinator Census, Virtual. [800 contacts]

Levenson, H.K. (2023) Supporting pollinator communities in NC agroecosystems. NC Botanical Garden, Chapel Hill, NC. [20 contacts]

Levenson, H.K. (2023) Release of a novel parasitoid for SWD control. NC Blackberry and Raspberry Grower Association Meeting, Rose Hill, NC. [30 contacts]

Levenson, H.K. and Burrack, H.J. (2023) Improvements in SWD Monitoring and Management. NARBA, Tampa, FL. [50 contacts]

Levenson, H.K. (2022) Enabling IPPM Strategies in Caneberries. Moore County Beekeepers Association Meeting, Vass, NC. [21 contacts]

Levenson, H.K. (2022) How Researchers are Supporting Native Bees at the Local, State, and National Levels. Oakwood Garden Club, Raleigh, NC. [25 contacts]

Levenson, H.K. (2022) The Who, What, and How of Native Bees. Raleigh Parks and Rec: Environmental Lecture Series, Virtual. [18 contacts]

Levenson, H.K. & Youngsteadt, E. (2022) Native Bees: Documenting Occurrences and Planning Conservation. Future of Conservation Forum, Chapel Hill, NC. [20 contacts]

Levenson, H.K. (2022) The Who, What, and How of Native Bees. Forsyth County Master Gardner Club Meeting, Virtual. [28 contacts]

Levenson, H.K. (2022) The Who, What, and How of Native Bees. North Carolina Botanical Garden's Garden Guide Training, Chapel Hill, NC.

Levenson, H.K. (2022) The Who, What, and How of Native Bees. NCDA Earth Day Presentation Series, Raleigh, NC. [18 contacts]

Levenson, H.K. (2022) Improvement in SWD monitoring and management. Southeast Regional Fruit and Vegetable Conference, Savannah, GA. [40 contacts]

Levenson, H.K. (2021) The Who, What, and How of Native Bees. NCSU Staff Senate Pollinator Week, Virtual. [28 contacts]

Levenson, H.K. (2021) The Who, What, and How of Native Bees. NCSU Staff Senate, Virtual. [20 contacts]

Levenson, H.K. (2021) The Who, What, and How of Native Bees. North Raleigh Rotary Club Meeting, Virtual. [20 contacts]

Levenson, H.K. (2020) Pollinator communities across North Carolina: from the individual to the agroecosystem. Haywood County Beekeepers Association Meeting, Virtual. [14 contacts]

Levenson, H.K. (2020) Native bees: diversity, biology, and identification tricks. NCSU Extension Agent Training Video.

Levenson, H.K. (2020) The bees in your backyard. Springdale Garden Club Meeting, Raleigh, NC. [14 contacts]

Youngsteadt, E & **Levenson, H.K.** (2019) Native Bee ID. Master Gardner College, Raleigh, NC. [20 contacts]

Levenson, H.K. (2019) Bees as Social Insects. Midnight Bee Supply – Bee School, Vass, NC. [20 contacts]

- Levenson, H.K.** (2018) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Wake County Beekeepers Association Meeting, Raleigh, NC. [26 contacts]
- Levenson, H.K.** (2018) Native pollinators and pollinator interactions. National Honey Bee Veterinary Consortium, Raleigh, NC. [20 contacts]
- Levenson, H.K.** (2018) Pollinator Habitat Study. Wake County Beekeepers Association Meeting, Raleigh, NC. [100 contacts]
- Levenson, H.K.** (2017) Pollinator Habitat Study. Orange County Beekeepers Association Meeting, Hillsborough, NC. [20 contacts]
- Levenson, H.K.** and Blanchard, V. (2016) Pollinator Habitat Study. Person County Beekeepers Association Meeting, Roxboro, NC. [20 contacts]

CONTRIBUTED EXTENSION PRESENTATIONS

- Levenson, H.K.** (2025) Pollinator habitat restoration and impacts on surrounding ecosystems, Boone, NC. [45 contacts]
- Levenson, H.K.** (2025) Pollinator habitat restoration and impacts on surrounding ecosystems, Mills River, NC. [14 contacts]
- Levenson, H.K.** (2025) Improved Management Recommendations for the Control of Spotted-Wing Drosophila in Berry Crops. North American Raspberry and Blackberry Association Annual Meeting, Kona, HI. [200 contacts]
- Youngsteadt, E., **Levenson, H.K.**, Rose, L., and Glen, C. (2025) Garden cleanup for pollinators: When to trim perennial stems. NC State Extension Conference, Greensboro, NC.
- Levenson, H.K.** (2024) Incorporating biological control into IPM programs for SWD in caneberries. NARBA, Wilmington, NC. [45 contacts]
- Levenson, H.K.**, Walton, V.M., Burrack, H.J. (2024) Improvements in spotted-wing drosophila monitoring and management in berry crops. SCRI Annual Stakeholder Meeting, Virtual. [131 contacts]
- Levenson, H.K.**, Burrack, H.J., Isaacs, R., Walton, V.M., Fanning, P., Van Timmeren, S. (2023) Improvements in spotted-wing drosophila monitoring and management in berry crops. SCRI Annual Stakeholder Meeting, Virtual. [105 contacts]
- Levenson, H.K.** (2020) The non-honey bees: native bees active this time of year. NCSU Apiculture Program: Hive Chat, Virtual. [589 contacts]
- Levenson, H.K.** (2020) Bee Field Collection and Identification. NCPCA Pollinator Field Day, Virtual. [220 contacts]
- Levenson, H.K.** (2019) Evaluating the connectedness of pollinator networks between augmented pollinator habitat and adjacent cropping systems. Chatham County Beekeepers, Pittsboro, NC. [100 contacts]
- Levenson, H.K.** (2019) Temporal and spatial dynamics of pollinator communities across NC agroecosystems. Moore County Beekeepers Association, Carthage, NC. [20 contacts]

POPULAR PRESS

PBS: SCI NC. (2024) "Harvesting Science"

Entomology Today. (2024) "Estimating Bee Communities is a Tall Task, Analysis Shows"

Entomology Today. (2023) "How One Entomologist Applies Lessons Learned in Design, Marine Biology"

WUNC: North Carolina Public Radio. (2023) "North Carolina researchers are learning what it takes to bring back the bees"

The News & Observer. (2022) "Carpenter bees can be a spring buzzkill. Here's how to get rid of them (or coexist)"

NCSU Extension: Homegrown. (2020) "Bee, Wasp, or Fly? Identifying N.C. Bees" [7525 contacts]

NC State University News. (2020) "The Buzz About Native Bees"

NCSU Extension: Homegrown. (2019) "Growing a Pollinator Garden" [1624 contacts]

Oregon State University: PolliNation Podcast. (2019). "Regional bee communities (and the plants they like)"

TEACHING ACTIVITIES

GUEST LECTURES AND CLASSES TAUGHT

Levenson, H.K. (2025) SWD Management in Small Fruits. (INVITED GUEST LECTURE). ENT 641, NCSU.

Levenson, H.K. (2025) Balancing Pollinator Health and IPM. (INVITED GUEST LECTURE). ENT 762, NCSU.

Levenson, H.K. (2023) SWD Management in Small Fruits. (INVITED GUEST LECTURE). ENT 641, NCSU.

Levenson, H.K. (2023) Balancing Pollinator Health and IPM. (INVITED GUEST LECTURE). ENT 762, NCSU.

Levenson, H.K. (2023) Management of Arthropods in Small-fruit Production Systems. (INVITED GUEST LECTURE). ENT 762, NCSU.

Levenson, H.K. (Spring 2019) Teaching Assistant. ENT 201: Insects and People, NCSU.

Levenson, H.K. (2018) Native bees and pollinator interactions. (INVITED GUEST LECTURE). ENT 203: Field Section, NCSU.

Levenson, H.K. (Fall 2017) Teaching Assistant. ENT 203: An Introduction to the Honey bee and Beekeeping, NCSU.

UNDERGRADUATES AND ASSISTANTS SUPERVISED

2025: 4 + 4 co-advised	2021: 2	2017: 3
2024: 7 + 2 co-advised	2020: 2	2016: 1
2023: 4 + 3 co-advised	2019: 6	
2022: 4	2018: 5	

PROFESSIONAL SERVICE

EDITOR ROLES

Journal of Melittology Special Edition Guest Editor, 2024 – Present

Northeastern Naturalist Guest Editor, 2024

COMMITTEES SERVED

Proposal Review Committee: NCSU OUR Research Awards (INVITED), 2023 – Present

NCSU Consumer & Youth Horticulture Working Group Member, 2021 – Present
NC Pollinator Conservation Alliance Committee Member, 2018 – Present
Applicant Review: NCSU CEFS Graduate Fellow Awards (INVITED), 2025
NCSU DEPP Departmental Postdoctoral Representative, 2023 – 2024
Being an Ally in Academia Seminar Series Executive Committee Member, 2022 – 2023
NCSU Entomology Graduate Student Association Co-Seminar Chair, 2019 – 2020
NCSU DEPP Departmental Social Committee Member, 2018 – 2019
NCSU Entomology Graduate Student Association Co-Social Chair, 2018 – 2019

UNDERGRADUATE PROGRAMS MENTOR

BeeMORE, Summer 2018, 2019, 2021, 2022, 2024

BeeMORE "Boot Camp" Presenter 2017, 2018, 2019, 2021, 2022, 2023, 2024
CEFS ASPIRE, Summer 2022, 2023

MEETING ORGANIZER

Early Career Professional Mini-Workshop. Conference Workshop – Entomological Society of America, Co-Organizer. Portland, Oregon. 2025.

Advancing Wild Bee Research and Conservation Through Standardized Methods. Conference Symposium – Entomological Society of America, Co-Organizer. Portland, Oregon.

Early Career Professional Mini-Workshop. Conference Workshop – Entomological Society of America, Co-Organizer. Phoenix, Arizona. 2024.

US National Native Bee Monitoring RCN - Sampling methods for the US National Native Bee Monitoring RCN. Workshop, Co-Organizer. Gibraltar Island, Ohio. 2023.

The Future of Native Bee Monitoring: Developing Sampling Methods for a US National Strategic Plan. Conference Workshop – Entomological Society of America, Co-Organizer. Vancouver, Canada. 2022.

Pollinator and soybeans: impacts, complications, and future directions. Conference Symposium – Entomological Society of America, Co-Organizer. Virtual. 2020.

EXTENSION SERVICES

NCSU Insect Identifications: 13

NCSU Extension Recommendations: 6

Georgia SWAP: 2024

North Carolina SWAP: 2024

NatureServe Canada: 2021

Endangered Species Act Review – Data contributor: 2021

INVITED PEER REVIEWS

Annals of ESA: 2023

Apidologie: 2019, 2023

AZASH: 2023

Biodiversity and Conservation: 2025

BMC Ecology and Evolution: 2024

The Canadian Entomologist: 2025

Discover Applied Sciences: 2024
Discover Environments: 2025
Economic Entomology: 2025, 2025
Ecology and Evolution: 2025, 2025, 2025
Ecology Letters: 2020
Ecosphere: 2023
Frontiers in Cellular and Infection Microbiology: 2022
Frontiers in Ecology and Evolution: 2021, 2023
Insects: 2020, 2020
Journal of Economic Entomology: 2021, 2022, 2023, 2024
Microbial Ecology: 2023
Scientific Reports: 2021, 2024, 2025, 2025
Sustainability: 2020
Urban Ecosystems: 2025, 2025

INVITED Grant REVIEWS

FFAR: 2025

Letters of Recommendation – Graduate School Applications: 11

Letters of Recommendation – Job Applications: 7

Letters of Recommendation – Fellowships and Other: 4

OUTREACH EVENTS

JC Raulston Arboretum Summer Camp 2021 [20 contacts]
Bugfest, North Carolina Museum of Natural Sciences 2015, 2016, 2017, 2018, 2019
[30,000 attendees, yearly]
Brain Awareness Night, North Carolina Museum of Natural Sciences 2016, 2017
Pollinator Garden, Gregg Museum 2017 [200 attendees]
Native Bees, Festival for the Eno 2017 [20,000 attendees]

TRAINING

Adult Mental Health First Aid Certification, December 2022
Agricultural Leadership Institution (SELECTED ATTENDEE), 2022
NCSU STEM EXTERNSHIP (SELECTED PARTICIPANT), 2021
Inclusive STEM Teaching Project, 2021