

Kathleen Ciola Evans

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EDUCATION

2020 – Present: PhD University of Maryland, Department of Entomology, College Park, MD
Dissertation: *Effects of Floral Diversification on Ecosystem Services and Plant Reproduction in the Edamame Agroecosystem*
Advisor: Dr. Anahí Espíndola, Assistant Professor
Co-advisor: Dr. Cerruti Hooks, Professor

2015 MSc University of Delaware, Department of Entomology and Wildlife Ecology, Newark, DE

2009 BSc University of Florida, Department of Biology, Gainesville, FL

PUBLICATIONS

Peer-reviewed

Evans KC, El-Hifnawi J, Hooks C, Espíndola A (2023). Benefits of Cross-Pollination in Vegetable Soybean Edamame. *Journal of Pollination Ecology*, [https://doi.org/10.26786/1920-7603\(2023\)728](https://doi.org/10.26786/1920-7603(2023)728)

Evans KC, Underwood RM, López-Uribe MM (2021). Combined effects of oxalic acid and requeening on mite and viral levels in honey bee colonies. *Journal of Apicultural Research*, <https://doi.org/10.1080/00218839.2021.1985260>

Hinshaw CR, **Evans KC**, Rosa C, and López-Uribe MM (2021). Virus infection and immunocompetence in feral honey bees. *Frontiers in Ecology and Evolution*, 8:594263, <https://doi.org/10.3389/fevo.2020.594263>

Brochu KK, Ray S, Singh A, Paiva M, **Evans K**, Grando C, Lavanga E, Ali J, Duque L, and López-Uribe MM. (submitted to *PNAS*). Crop domestication drives changes in floral functional traits and pollinator visitation

Extension

Evans KC (2020). An Easy Method to Split a Colony. *Bee Culture*, September, 40-42, <https://tinyurl.com/mu2hrkzn>

Evans KC (2020). Colony Division: A Simple Method to Split a Colony. *Penn State Extension Learn Now Video* (>4,500 views), <https://bit.ly/37KH6YB>

Evans KC, Ostiguy N and López-Uribe MM (2017). Efficacy of Different Methods of Oxalic Acid Application. *American Bee Journal* 157:505-507, <https://tinyurl.com/bdf4mjjs>

Evans KC (2017). Installing Package Bees. *Penn State Extension Learn Now Video* (>20,000 views), <https://bit.ly/3kCFeER>

GRANTS AND AWARDS

2023 Recipient of the UMD Entomology Arthur Gahan Graduate Student Fellowship Award

2023 Recipient of UMD Entomology Charles F. Reichelderfer Memorial Mentorship Award

2023 UMD Sustainability Fund (\$32,826)

2023 UMD Graduate Student Summer Research Fellowship (\$5,000)

- 2022 Entomological Society of America, first place in poster competition
- 2022 University of Maryland CMNS Dean's Fellowship Award (\$2,500)
- 2021 Northeast SARE Graduate Student Research Grant (\$14,995)
- 2020 University of Maryland CMNS Dean's Fellowship Award (\$2,500)
- 2015 Virginia State Beekeepers Association (\$1,500)
- 2015 Eastern Apicultural Society (\$7,000)
- 2013 Foundation for the Preservation of Honey Bees Research (\$2,000)
- 2013 NAS/IUSSI Travel Award/Grant (\$500)
- 2012 National Honey Bee Research Grant (\$13,274)
- 2007 Animal Sciences Undergraduate Scholarship, University of Florida (\$500)

TEACHING

- Spring 2024 *BSCI 337 Biology of Insects*, University of Maryland
Led and graded the accompanying lab (18 students)
- Spring 2023 *BSCI 135 Amazing Green: Plants that Transformed the World*, University of Maryland
Led and graded the accompanying lab (21 students)
- Fall 2022 *BSCI126 Pollinators in Crisis*, University of Maryland
Led and graded two student discussions (24 students)
Invited lecturer Fall 2022 – Pollinators in a Changing Climate
- Spring 2010 *Plants, Plagues and People*, University of Florida
Led and graded student discussions

SYNERGISTIC ACTIVITIES

1. Served on Search Chair Committee for the UMD Entomology Department (Fall 2023)
2. Student Representative for Entomology Department at University of Maryland College of Computer, Mathematical, and Natural Sciences (CMNS) (2022-2023)
3. Committee member of Entomology Society of America, Eastern Branch EntoQuest (2021-2023)
4. President & Vice President Elect of the University of Maryland Entomology Student Organization ([ESO](#)) (2021-2023):
I represented graduate student interests at faculty meetings and generally served as a liaison between faculty and students. Directing a team of four officers, I also led major ESO efforts that included organizing graduate student recruitment events, awarding travel grants and extension awards, coordinating student-invited seminar speaker visits, and creating a new officer position for an undergraduate representative.
5. Member of the Board of Directors of the Maryland Organic Food and Farming Association (MOFFA) (2021-2022)
6. Mentoring: I have directly mentored 12 undergraduate student researchers through paid internships and research credits. I facilitated learning through field and laboratory research experience and encouraged engagement within the scientific community through attendance to lab meetings and departmental seminars, and reading scientific literature. In collaboration with Entomology Student Organization, I developed an online platform (ELMS course page) for the Entomology undergraduate community to share information related to the program or job/graduate opportunities within the field.

PROFESSIONAL & RESEARCH SKILLS

Field: Routine maintenance of apiaries and colonies (up to 100 colonies) including colony assessments and collecting field samples for disease and microbiome screening | Bee behavioral assays | Honey bee hygienic assays| Volatile emission collections | Soil cores collections

Greenhouse: Development of seed germination protocols | Manage *Cucurbitaceae* experiments involving flower nutrition, morphology, and volatile emissions | Manage *Ipomoea batatas* | Soybean hand-pollination experiments

Laboratory techniques: Molecular cloning | Sanger sequencing| Histochemistry and immunohistochemistry| Histology | Paraffin embedding and cryosectioning | Light microscopy | In-situ hybridization | DNA cloning, qPCR, PCR, RNA extraction | Protein assays | Viral titre quantification | Morphometric identification of African and European honey bees (FABIS & USDA-ID | Analyses of *Cucurbitaceae* floral morphology | Electrophoresis with agarose gel | Cell staining, fixation and slide preparation techniques | Insect curation

Software: Microsoft Office (Excel, Word, MS PowerPoint) | Statistical software including JMP® and R statistical programming | Qualtrics Research and Survey Software | website development and maintenance

Social: Organize outreach and educational events and workshops for children, beekeepers, & undergraduate students | Conduct beekeeping workshops | Create educational materials including fact sheets, protocols, educational videos and brochures | Create and maintain social media channels for organizations and research labs

Community science

- Project leader of *Tracking Feral Health in PA, A citizen Science Approach*, 2016-2019
- Project leader of *Evaluation of mid-Summer Splits on Varroa mite Reduction and Colony Productivity*, 2015

PROFESSIONAL & RESEARCH EXPERIENCE

October 2016-December 2019: Research Technologist II - Pennsylvania State University, Entomology Department, State College, PA, supervisors: Associate Professor Margarita López-Urbe, Assistant Research Professor Luis Duque, Professor Christina Grozinger

Managed laboratory, greenhouse, and field experiments | Managed apiaries and apiculture extension program | Developed and delivered educational materials including online materials, protocols, fact sheets, and presentations | Managed López-Urbe lab website and social media channels | Maintained laboratory standards | Mentored to the Penn State Beekeeping Club

Summer 2016: Research Intern – Purina Mills Animal Nutrition, Gray Summit, MO

Assisted with honey bee nutritional studies | Supervised field trials and colony management | Performed nutritional assays

June 2015 – May 2016: Project Leader - Eastern Apicultural Society 2015 Foundation Grant (\$7,000), University of Delaware, Department of Entomology and Wildlife Ecology, Advisor: Deborah Delaney

Project: *Evaluation of Summer Splits on Varroa Mite Reduction and Colony Productivity*
Assessed the effects of late-summer splits on varroa mite reduction and colony productivity via IPM tools and strategies. Developed a citizen science program and collecting data from

beekeepers throughout the mid-Atlantic region of the U.S. | Organized beekeeping workshops | Mentored student interns from Scientific and Technological Investigative Research and College of Agriculture and Natural Resources.

August 2008 - May 2012: Apiary Research Assistant – Honey Bee Research and Extension Laboratory, University of Florida, Department of Entomology, supervisor Professor Jamie Ellis
Routine maintenance of honey bee colonies | Presented education and extension programs at University of Florida Bee College

August 2010 - May 2012: Certified African Honey Bee Laboratory Technician – FDACS, Florida Department of Agriculture and Consumer Services, supervisor David Westervelt & Jerry Hayes, Florida Apiary Inspection Assistant Chief
Identifying Africanized honey bees using two certified morphometric methods (Fast Africanized Bee Identification System (FABIS) and Universal System for Detecting Africanization) | Assisted with Florida apiary inspections | Participated in educational and extension programs throughout the state

May 2011-September 2011: Laboratory Technician – University of Florida, Department of Microbiology and Cell Science, supervisor Associate Professor Byung-Ho Kang
Investigated tissue- and cell-specific gene expression in maize, specifically genes associated with sugar metabolism, structure, function and regulation using in-situ hybridization, electron microscopy, and molecular cloning

September 2010 – April 2011: Research Assistant – University of Florida, Department of Plant Pathology, Institute of Food and Agriculture Services, supervisor Professor Jeffrey Rollins
Investigated gene expression of *Sclerotinia sclerotiorum* using histological techniques including tissue processing, paraffin embedding and sectioning, cryosectioning, and light microscopy

February 2010 – March 2011: Laboratory Technician – USDA, Institute of Food and Agriculture Services, University of Florida, supervisor Courtesy Professor Prem Chourey
Investigated tissue- and cell-specific gene expression to understand the partitioning of sucrose in maize using in-situ hybridization and molecular cloning

Undergraduate Research

February 2009 - December 2009: Research Assistant - University of Florida, Department of Molecular Genetics & Microbiology, supervisor Professor Martin J. Cohn
Assisted with experiments regarding androgen regulation of digit ratios, and development of external genitalia and cartilage | Paraffin embedding and cryosectioning of mouse tissue | In-situ hybridization

June 2008 – December 2008: Research Assistant - University of Florida, Department of Biology, supervisor Professor Michelle Mack
Measuring soil pH and leaf area | Treated soil for carbon/nitrogen analysis | Collected forest litter fall | Collected and extracted soil samples | Measured tree diameter and seedling growth | Collected data during Summer 2008 at Earth University, Mercedes, Costa Rica

ACADEMIC

Presentations (**invited speaker*)

Evans KC* and Espíndola A. Creating a Buzz: Fostering Undergraduate Engagement in Entomology, Research and Beyond. Entomological Society of America, Washington DC (2023)

Evans KC and Espíndola A. Benefits of Cross Pollination in Vegetable Soybean Edamame. UMD Entomology Research in Progress talk, College Park, MD (Spring 2023)

Evans KC and López-Uribe MM. Efficacy of Oxalic Acid (OA) applications and requeening in reducing varroa mite infestations in honey bee packages. SINNERS Social Insect Conference, Philadelphia PA (December 2018)

Evans KC* and Delaney D. Evaluation of mid-Summer Splits on Varroa mite Reduction and Colony Productivity. Eastern Apiculture Society Conference, Galloway, NJ (August 2016)

Evans KC* and Delaney D. Evaluation of mid-Summer Splits on Varroa mite Reduction and Colony Productivity. Eastern Branch Entomological Society of America, Rehoboth Beach, DE (March 2015)

Evans KC and Delaney D. An Integrated IPM Program Using Non-Chemical Controls to Manage Parasites in Honey Bee Colonies. Entomological Society of America, Austin, TX (November 2013)

Posters

Evans KC, El-Hifnawi J, Hooks C, Espindola A. Benefits of cross pollination in edamame. Eastern Branch Entomological Society of America, Philadelphia, PA (April 2022).

Evans KC, Lingbeek B, Singh A, Corcoran C, Demchak K, Fleischer S, López-Uribe MM. Who Pollinates Blueberries in Pennsylvania? Pollinator In-Service Extension Meeting, State College, PA (July 2019)

Evans KC and López-Uribe MM. Efficacy of Oxalic Acid (OA) applications and requeening in reducing varroa mite infestations in honey bee packages. Pennsylvania State Beekeepers Association, State College, PA (November, 2018)

Evans KC, Hinshaw CR., López-Uribe MM. Citizen Scientist's Tracking the Health and Survival of Feral Bees in Pennsylvania. Pennsylvania State Beekeepers Association, State College, PA (November, 2018)

Evans KC and López-Uribe MM. Efficacy of Oxalic Acid (OA) applications and requeening in reducing varroa mite infestations in honey bee packages. Center for Pollinator Research Symposium, State College, PA (April, 2018)

Evans KC and López-Uribe MM. Efficacy of Oxalic Acid Applications in Reducing Varroa Mite Infestations in Honey Bee Colonies. Pennsylvania State Beekeepers Association, State College, PA (November 2017)

Evans KC and Delaney D. An Integrated IPM Program Using Non-Chemical Controls to Manage Parasites in Honey Bee Colonies. American Beekeeping Conference, Baton Rouge, LA (January 2014)

Evans KC and Delaney D. An Integrated IPM Program Using Non-Chemical Controls to Manage Parasites in Honey Bee Colonies. Entomological Society of America, Eastern Branch Annual Meeting, Lancaster, PA (March 2013)

EXTENSION

Beekeeping workshops and short courses

2019 College of Agriculture Sciences Staff Retreat, University Park Apiary State College, PA

2019 Beekeeping 101: Package Bee Installation. Centre County Beekeeping Association, Centre Hall, PA

- 2017 Introduction to Beekeeping. Centre County Beekeeping Association, State College, PA
- 2017 College of Agriculture Sciences Staff Retreat. University Park Apiary State College, PA
- 2014 IPM workshop for beekeepers. University of Delaware, Newark, DE
- 2008-2012 African Honey Bee Identification. University of Florida Annual Bee College, Gainesville, FL

Presentations

- 2020 **Evans KC**. A Simple Method to Divide a Colony. March 2020. NW PA Beekeepers Association. Invited speaker
- 2019 **Evans KC** and López-Urbe MM. Tracking the Health of Feral Bees in Pennsylvania. Western Pennsylvania Beekeeping Seminar, ABCI Beekeepers Association, Kittanning, PA
- 2018 **Evans KC**. Beekeeping Basics. Penn State Beekeeping Club, State College PA
- 2017 **Evans KC**. Bee's Eye View on Pollination. Young Pennsylvania Farmers, Spring Mills, PA
- 2017 **Evans KC**. Integration of Colony Splits into Effective Management Practice for Sustainability. North Carolina State Beekeepers Association, Winston-Salem, NC. Invited speaker
- 2017 **Evans KC**. IPM management strategies for beekeepers. Centre county beekeepers, Lemont, PA
- 2015 **Evans KC**. The Basics of Pollination and its Importance to the Every Day Life of a Bee. New Castle County Food Educators, Newark, DE
- 2015 **Evans KC**. An Integrated IPM Program Using Non-Chemical Controls to Manage Parasites in Honey Bee Colonies. Philadelphia Beekeepers Guild 5th Annual Natural Beekeeping Symposium, Temple University, Philadelphia, PA
- 2015 **Evans KC**. Evaluation of mid-Summer Splits on Varroa mite Reduction and Colony Productivity. Central Jersey Beekeepers Association, Freehold, NJ
- 2015 **Evans KC**. Evaluation of mid-Summer Splits on Varroa mite Reduction and Colony Productivity. Colonial Beekeepers Association, Yorktown, VA
- 2014 **Evans KC**. Evaluation of mid-Summer Splits on Varroa mite Reduction and Colony Productivity. Virginia State Beekeepers, Weyers Cave, VA
- 2014 **Evans KC**. Identification and Status of the African Honey Bee. Georgia Beekeeping Association, Milledgeville, GA
- 2014 **Evans KC**. Introduction to Beekeeping. Chester County Beekeepers Association Annual Seminar, West Chester, PA.
- 2013 **Evans KC**. Honey Bee Biology, Beekeeping 101. Delaware Beekeepers Association, Smyrna, DE
- 2013 **Evans KC**. An Integrated IPM Program Using Non-Chemical Controls to Manage Parasites in Honey Bee Colonies. Maryland State Beekeepers' Association Spring Meeting, College Park, MD

MEDIA & BLOG PUBLICATIONS

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- Evans KC & Espíndola A (2024). Floral Supplements Support Ecosystem Services in Our Green Spaces, *Maryland Grows Blog*, <https://marylandgrows.umd.edu/2024/01/09/floral-supplements-support-ecosystem-services-in-our-green-spaces/>
- Evans KC, Ribeiro T & Huysman A (2023). Mosquitos Research helps Predict the Spread of West Niles Virus, *UMD Entomology Seminar*, <https://entomology.umd.edu/news/category/colloquium>
- Evans KC (2022). The Role of Interaction Networks in Describing Plant-Pollinator Interactions & Predicting Vulnerability to Environmental Change, *UMD Entomology Seminar*,

- <https://entomology.umd.edu/news/seminar-blog-the-role-of-interaction-networks-in-describing-plant-pollinator-interactions-and-predicting-vulnerability-to-environmental-change>
- Evans KC & Perry E (2022). The Role of Indigenous Knowledge and Land Management Practices in Conservation, *UMD Entomology Seminar*, <https://entomology.umd.edu/news/the-role-of-indigenous-knowledge-and-land-management-practices-in-conservation>
- Evans KC & Hartman (2021). Got Good Clean Dirt? A Necessity for Ground-Dwelling Bees, *UMD Entomology Seminar*, <https://entomology.umd.edu/news/seminar-blog-got-good-clean-dirt-a-necessity-for-ground-dwelling-bees>
- Evans KC & McConnell (2020). Rarity & Native Bees, *UMD Entomology Seminar*, <https://entomology.umd.edu/news/rarity-native-bees>
- Evans KC (2019). *Morning Sting*, Spring Newsletter 2019, <https://bit.ly/37W6yZB>
- Evans KC and López-Uribe MM (2018). Tracking the Health of Feral Bee 2018, <https://bit.ly/37NXjdQ>
- Evans KC and López-Uribe MM (2018). Tracking Feral Bee Health in Pennsylvania, Preliminary Results 2017, <https://bit.ly/3gyyTsT>
- Evans KC and López-Uribe MM (2018). National Pollinator Week, #pollinatorweek, <https://bit.ly/2LfGYqD>
- Evans KC and López-Uribe MM (2017). What would Halloween be without pumpkins, where would pumpkins be without bees? <https://bit.ly/2Ki6sDy>
- Evans KC and López-Uribe MM (2017). Queen Improvement Field Day in Pittsburgh, <https://lopezuribelab.com/2017/07/10/2191/>
- Evans KC and López-Uribe MM (2017). Squash bee excursion, <https://lopezuribelab.com/2017/08/23/squash-bee-excursion/>
- Evans KC and López-Uribe MM (2017). Queen Improvement Field Day in Pittsburgh, <https://lopezuribelab.com/2017/07/10/2191/>
- Evans KC and López-Uribe MM (2017). Queen rearing 101, <https://lopezuribelab.com/2017/06/20/queen-rearing-101/>
- Evans KC and López-Uribe MM (2017). Our first feral sample of the season, <https://lopezuribelab.com/2017/01/31/first-feral-colony-sample-january-19-2017/>
- Evans KC and López-Uribe MM (2016). Methods of oxalic acid (OA) treatments, <https://lopezuribelab.com/2016/11/05/methods-of-oxalic-acid-ox-treatments/>
- Evans KC and Delaney D (2016). Evaluation of Summer Splits on Varroa Mite Reduction and Colony Productivity. *The Commonwealth Buzz*, Virginia State Beekeepers Association, January 2016

OUTREACH ACTIVITIES

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| 2022 | Organized ESO undergraduate seminar: Is Grad School in Your Future? College Park, MD |
| 2023 | Maryland Day Insect Zoo, University of Maryland, College Park, MD |
| 2019 | Great Insect Fair, Penn State Entomology Department, State College, PA |
| 2019 | Penn State College of Agriculture Staff Retreat Apiary Tour, State College, PA |
| 2018 | Great Insect Fair, Penn State Entomology Department, State College, PA |
| 2018 | Penn State College of Agriculture Staff Retreat Apiary Tour, State college, PA |
| 2017 | Great Insect Fair, Penn State Entomology Department, State College, PA |
| 2017 | Penn State College of Agriculture Staff Retreat Apiary Tour, State College, PA |
| 2017 | Wings in the Park, Center for Pollinator Research, State College, PA |

- 2015 Ag Day 2015, University of Delaware, Newark, DE
- 2014 Extension Coordinator for University of Delaware Entomology and Wildlife Ecology Department
- 2014 Seminar coordinator for University of Delaware Entomology and Wildlife Ecology Department spring seminar series
- 2014 EcoQuest at Towle Institute at Tatnall Middle School, Wilmington, DE
- 2014 EcoQuest at Dover Public Library, Dover, DE
- 2014 *Working with Animals* at White Clay Creek Park, Wilmington, DE
- 2014 Kid's GreenFest at NCCL middle school, Newark, DE
- 2014 Ag Day, University of Delaware, Newark, DE
- 2013 Ag Day, University of Delaware, Newark, DE
- 2013 Kid's GreenFest at NCCL middle school, Newark, DE
- 2012 Silverside Church Green-Fair, Wilmington, DE
- 2008-2012 University of Florida Annual Bee College, Gainesville, FL

ADDITIONAL ACTIVITIES

- 2016 Honey Judge at New Jersey State Fair
- 2009 Social director for Habitat for Humanity, University of Florida
- 2007 Studies abroad, Lorenzo De Medici College, Tuscania, Italy
- 2008 Florida Alternative Breaks, volunteered with Guilford Native American Tribe
- 2006 Florida Alternative Breaks, volunteered the Homeless shelter in Washington DC
- 2004 State of Florida Champion Children's Equestrian Jumping

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- 2020-Present Entomology Society of America (EntoSoc)
- 2012-2016 Eastern Apiculture Society of America (EAS)