

Colby Grant

Graduate Student & Lab Technician Senior

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Education

PhD in Entomology, 2023–present, University of Kentucky, Lexington, KY.

- Advisor: Dr. Nathan Haan
- GPA: 4.0

B.A. in Biology, 2018-2022, Transylvania University, Lexington, KY.

- GPA: 3.911; Summa Cum Laude; Premier Scholar; Holleian Honor Society Member
- Major: Biology (Ecology, Evolution, and Behavior Track)
- Minors: Environmental Studies & Sociology

Grants, Scholarships, and Awards

- Spring 2025 Fayette County Conservation District Scholarship	\$1,000	2025
- NSF GRFP: Honorable Mention	N.A.	2025
- Entomology Department Poster Session: 1 st in Staff Division	\$500	2024
- Transylvania Kenan Fund for Faculty and Student Enrichment Grant	\$3,228	2021
- William R. Kenan, Jr. Scholarship	\$100,000	2018
- Transylvania Achievement Award	\$2,000	2018

Research Experience

Ant Communities and Ecosystem Services in Kentucky Agroecosystems.
University of Kentucky, 2023-Present, PhD Thesis.

- Evaluate how pasture management practices, particularly cultivar and fungal endophyte diversity, influence ant community structure and function.
- Quantify how IFA invasion restructures arthropod communities, focusing on changes in abundance, diversity, and composition across recently invaded agroecosystems.
- Assess how IFA invasion impacts ecosystem services, particularly natural pest suppression, and determine how mutualisms with aphids mediate these effects.
- Investigate the physiological and behavioral mechanisms facilitating IFA range expansion by comparing the thermal tolerance and cold survival strategies of black (BIFA), red (RIFA), and hybrid (HIFA) fire ants.

Arbovirus Surveillance and Vector Breeding Habitat Characterization.
Transylvania University, 2021-2022, Undergraduate Research Leader.

- Collaborated with Dr. Elizabeth Loh and Kentucky Department of Fish and Wildlife's (KDFW) lead wildlife veterinarian to characterize West Nile Virus vector breeding habitat and conditions, with a focus on areas of anthropogenic disturbance from a One-Health frame.

Coverage Analysis and Identification of Tree Biodiversity on Transylvania's Campus.

Transylvania University, 2020, Principal Investigator.

- Researched and compiled various identification information for the specific trees on Transylvania's campus to act as a community educational resource in collaboration with Transylvania Professor Dr. Sarah Bray.

Ecological Traps in Urban Gardens.

University of Kentucky, 2017-2018, High School Researcher.

- Assisted Dr. Crowley in a research project testing the effects of common garden plants that serve as ecological traps on native insect diversity and fitness.

Presentations

C. Grant, A. E. Carlisle, R. McCulley, N. Haan. 2024. Manipulating cultivar diversity: impacts to arthropod communities in pasture agroecosystems. Entomological Society of America Annual Meeting. Phoenix, AZ.

- Invited conference talk. Part of ESA Section Symposium: Management Impacts on Arthropod-based Ecosystem Services in Agricultural Landscapes.

C. Grant, N. Haan. 2024. Impacts of Fire Ant Invasion on Ant Communities. Annual UKY Entomology Department Retreat: Poster Session. Lexington, KY. (Poster).

- Awarded first place in staff division.

Professional Experience

Lab Technician Senior, University of Kentucky, 2023-Present.

- Responsible for assisting in the design and implementation of research projects for the Haan lab that evaluate impacts of local management practices and landscape-scale predictors on arthropod biodiversity and ecosystem services. Projects focus on natural enemies of crop/livestock pests, pollinators, and decomposers.
- Serve as the de facto lab manager and be responsible for inventory management, ordering supplies, and working with principal investigator to ensure the lab is compliant with University and Federal regulations.

Environmental Scientist, KY Transportation Cabinet DEA, 2022-2023.

- Coordinated with Government agencies such as the Army Corps of Engineers and KY Division of Water to acquire the necessary environmental permits and clearances to construct road projects.
- Oversaw consultant contracts to complete Clean Water Act Section 404/401 permits.
- Conducted field visits to verify stream and wetland classifications for road project permits.
- Utilized remote sensing software, such as ArcGIS, to evaluate and quantify environmental impacts of construction projects to determine mitigation needs.
- Provided technical and environmental assistance to assigned Districts and subject matter experts when requested.

Land Stewardship Technician, Floracliff Nature Sanctuary, 2022.

- Focused on stewardship and restoration activities of local KY River Palisades habitats

- by collaborating with the Stewardship Director.
- Independently monitored and removed invasive exotic species in forest and grassland habitats using hand tools, power tools, and herbicide (cut-stump and foliar herbicide applications).
- Assisted in the chemical trunk-injection treatment of ash trees to protect them from the Emerald Ash Borer. Required obtaining my KY Category 2 Pesticide Applicator license.
- Assisted with and led interpretive hikes and educational programs as requested. Construct scientific communication materials for public outreach and education.
- Conducted an update of the sanctuary's species inventory and monitoring spreadsheets (macroinvertebrates, plants, and animals).

Tutoring Center Manager, Transylvania University, 2020-2022.

- Led tutoring department by checking students in, and assuring all tutors are present and on task.
- Under my leadership, tutoring visits increased by 25% from the previous year, with approximately 15% of the student body utilizing tutoring with 67% of students visiting more than once.
- Other duties included communication with professors, compilation of attendance data, and leading training sessions.

Biology and Chemistry Tutor, Transylvania University, 2019-2022.

- Assisted peers by guiding them through the concepts and content from the introductory biology and chemistry classes offered at Transylvania.
- Applied and honed knowledge of biology and chemistry to effectively communicate information.
- Mentored students by evaluating their preferred learning methods and adjusting accordingly to ensure that every student can understand the concepts.

Professional Development and Conference Attendance

Organic Association of Kentucky, Annual Conference, 2025.

- Attendant.

Entomological Society of America, Annual Meeting, 2024.

- Invited speaker.

Ohio Ants Workshop, OSU, 2024.

- Three-day intensive workshop covering ant taxonomy, ecology, conservation, invasions, husbandry and citizen science/outreach.
- Led by Doctors R. Adams (OSU) & M. Ramalho (WCU).

Kentucky Pollinator Plans Stakeholder Meeting, Annual Meeting, 2023.

Professional Service

Outreach Coordinator, UK Entomology Graduate Student Organization: Garman Club, 2024-present.

- Works with outreach and extension specialists in the department to organize and inform all students of outreach opportunities.
- Oversees an "outreach committee" with a list of students who are interested in:
 - o Volunteering for outreach and extension opportunities that can provide revenue to the Garman club.
 - o Creating agronomy kits that can be designed for FFA entomology tests.
- Organizes annual outreach events such as the Arbor Day event at the Arboretum and the Raven Run Critter Crawl

- Maintains insect collection equipment and coordinates supply check-out

Outreach and Community Engagement

Leader:

- Critter Crawl, Raven Run Nature Sanctuary, Lexington, KY, August 2025.
- Junior Naturalist Pollinator Pals, McConnell Springs Park, Lexington, KY, June 2025.
- Charley Harper Exhibition, Headley Whitney Museum, Lexington, KY, May 2025.
- Classroom visit, Wilmore Elementary, Wilmore, KY, May 2025.
- Bugs & Beyond, Chaotic Good CCG, Lexington, KY, April 2025.
- Annual STEM Night, George Washington Carver STEM Academy, Lexington, KY, April 2025.
- Community STEAM Night, Tate Creek Middle School, Lexington, KY, March 2025.
- Inspiring Women in Entomology, RISE STEM Academy for Girls, Lexington, KY, December 2024.
- Insectarium Open House, University of Kentucky, Lexington, KY, October 2024.
- Creepy Crawlies, Wolf Creek National Fish Hatchery, Jamestown, KY, October 2024.
- Creepy Crawlers with Bluegrass Trout Unlimited & UK Entomology, Veteran's Park, October 2024.

Coordinator:

- Moth Night, Carter Caves State Resort Park, Olive Hill, KY, June 2025.
- Insects event, Cummins Nature Preserve, Maysville, KY, May 2025.
- Fall Festival, Squires Elementary School, Lexington, KY, October 2024.
- UFI Tree Week: Night Adventure, McConnell Springs, Lexington, KY, October 2024.

Participant:

- Annual Central Bluegrass Summer Butterfly Count, NABA & Floracliff Nature Sanctuary, 2022-2023.