LSU AgCenter: Forest Entomology
Summer & Fall, 2023 (2-4 month internship)
Supervisor/Mentor:
Dr. Todd Johnson Profile: https://www.lsuagcenter.com/profiles/ToddJohnson
Research/Area of Study:
Dr. Todd D. Johnson is an Assistant Professor of Forest Entomology in the Department of Entomology at Louisiana State University Agricultural Center. His research program uses laboratory and field bioassays to understand how natural variation in the environment impacts the evolution and maintenance of chemicals produced by insects and plants in tri-trophic systems. Johnson seeks to use research findings to improve management of insects of conservation or economic concern.
Job Description/Responsibilities:
The intern(s) will help conduct research on projects related to behavioral and chemical ecology, as well as conservation in forest ecosystems. These projects can include but are not limited to: 1. Sampling, processing, and identifying biodiversity of arthropods associated with bottomland species of ash (*Fraxinus* spp.) trees threatened by the invasive emerald ash borer (*Agrilus planipennis*), 2. Testing attractants and repellents of native and non-native wood boring insects in the field, 3. Field studies evaluating the importance of multi-modal cues (e.g., visual and chemical) for longhorn beetle mate-location and predator-avoidance, 4. Collection of volatiles from insects and plants under variable environmental conditions 5. Development of automated monitoring systems (e.g., computer vision) to observe and test hypotheses related to insect behavior under ecologically relevant conditions. Interns will be trained on safety, use of dichotomous keys for insect and plant identification, use of equipment (e.g., chainsaw [if desired], collection of volatiles, GC/MS) and insect collection techniques. Interns are expected to work in the laboratory or field full-time (40 hr/wk) alongside Dr. Johnson's research team.
Qualifications:
• Depending on the project and interests of the student, they should have general knowledge and skills in at least two of the following areas: ecology, entomology, chemistry, biochemistry, computer science, or electrical engineering, and should have completed at least their third year at a university level. MS and PhD students are encouraged to apply. • Prior fieldwork experience, plant or insect identification, sampling and analysis of volatile compounds, automated data collection and analysis, analysis of images and videos with neural networks or other computer vision tools
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