

## Toxic Risks to Bees in Urban and Agricultural Landscapes

Drs. Reed Johnson and Mary Gardiner, The Ohio State University, Department of Entomology, are seeking PhD students to investigate the impacts of toxic exposure on bee health and conservation in urban and agricultural environments. Soils in urban Cleveland, OH contains elevated levels of Pb, Cd, Cr, and other contaminants. Pesticide use in agricultural areas expose bees to potentially harmful levels of neonicotinoid insecticides, particularly through dust generated during corn planting. Both urban and agricultural areas are being studied as potential sites for arthropod conservation, thus it is vital to understand if a legacy of soil contamination or insecticide exposure influences their value for bee biodiversity and productivity. Students could quantify the impacts of pesticide or heavy metal exposure by studying bee foraging behavior, reproduction, and/or pollination services in wild or managed bees. The successful candidates would conduct a combination of laboratory and field-based research. Students with experience working with bees, extracting DNA, conducting PCR analyses, and using bioinformatics tools are strongly encouraged to apply. Selected students would begin their programs in Fall, 2019. Minimum requirements to apply include previous research experience, a 3.6 or higher undergraduate GPA and a 75<sup>th</sup> percentile or higher average on the verbal and quantitative portions of the GRE.

To learn more about our projects please email us a brief statement of your interests along with a CV or resume.

Reed Johnson

[johnson.5005@osu.edu](mailto:johnson.5005@osu.edu)

<https://entomology.osu.edu/our-people/reed-johnson>

Mary Gardiner

[Gardiner.29@osu.edu](mailto:Gardiner.29@osu.edu)

<http://u.osu.edu/gardinerlab>