# Data Science Capstone: Bee Species Identification

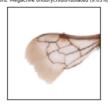
## Cheadle Center for Biodiversity and Ecological Restoration

Explorations of methods for quantifying differences in wing morphology

Accuracy: 0.6153846153846154

#### Classification of Images using SVM

1st: Habroporda Depressa-Isolated (51,79%) 1st: Xylocopa tabaniformis orpifex (91,31%) 1st: Xylocopa tabaniformis orpifex (70,88%) 1st: Xylocopa tabaniformis orpifex (90,01%) 1st: Xylocopa tabanifor











1st: Habroporda Depressa-Isolated (58.92%) 1st: Xylocopa tabaniformis orpifex (90.74%) 1st: Habroporda Depressa-Isolated (79.46%) 1st: Xylocopa tabaniformis orpifex (91.22%) 1st: Xylocopa tabaniform











#### Introduction

In this report, we explore the significance of differences in wing morphology for bee species identification. Leveraging advanced data science techniques such as Linear Discriminant Analysis (LDA) and Spectral Embedding, our capstone project aims to unravel the unique characteristics within wing-vein structures.

### **Linear Discriminant Analysis (LDA)**

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## **Spectral Embedding**

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