



## Connecticut Entomological Society Minutes from the 587<sup>th</sup> Meeting 15 November 2024

Hybrid Zoom held at Wesleyan University Kerr  
Lecture Room, Shanklin Hall Room 107.

Members met for a pre-meeting social at the Lecture Room approx.  
6:30pm. Refreshments were served.

### **Business meeting:**

President Richard Cowles called the meeting to order at approximately 7:30pm.

### **New Business:**

- President Richard Cowles presented the Treasurer's report, which compared expenses from October and November 2024 to the expenses from the previous season.

### **Exhibits:**

- President Richard Cowles brought apples of the Gold Rush variety from his orchard for the tasting.

The evening presentation started at 7:35 pm.

### **Evening Presentation 1:**

#### **Discovery of new pesticide resistance genes in *Drosophila sechellia***

#### **Joseph Coolon, Ph. D.**

After giving a broad overview of interactions between insects and their host plants, Dr. Joseph Coolon described the biology of *Drosophila sechellia*, a highly specialized fruit fly. *D. sechellia* is an island-endemic species native to the Seychelles in the Indian Ocean that has specialized to eat a single host plant (toxic to related species), *Morinda citrifolia*. Dr. Coolon was able to identify some of the defense compounds found in the fruit of *M. citrifolia* and has also identified the genetic basis for resistance to some of these toxins in *D. sechellia*. Dr. Coolon closed with a mention of the discovery of functional roles for a gene family called Osiris in evolved resistance to insecticidal compounds.

**Evening Presentation 2:**  
**Osiris Genes and Bioinsecticidal RNAi Applications**

**Chris Hayes, doctoral student of Dr. Joseph Coolon**

Chris Hayes began with a description of the Osiris family of genes, and their possible importance in future IPM (Integrated Pest Management) systems. This gene family is unique in that it is critical to insect toxin resistance and cuticular formation, and is common to all insects. These characteristics make Osiris genes excellent candidates for targeting insect pests by developing novel bioinsecticides that utilize RNA interference. Such a strategy for pest management provides distinct advantages over conventional insecticides with improved outcomes for environmental safety, public health, and overcoming insect resistance.

**Respectfully Submitted,**  
**Secretary Lukas Keras**