

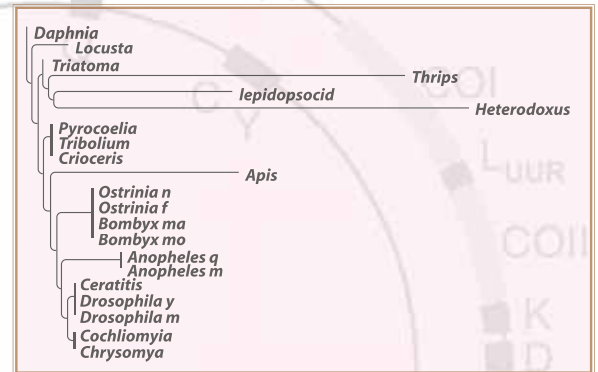
### DR MARK DOWTON



## MOLECULAR EVOLUTION

Dr. Mark Dowton studies molecular evolution, particularly of the mitochondrial genome. He is interested in understanding the ways in which DNA mutates and evolves, and the biological patterns that these mutations reveal.

Molecular studies are focused on understanding how genes move in the mitochondrial genome, and why the rate of mutation has accelerated in certain insect groups. These studies in turn reveal biological patterns, particularly of evolutionary relationship.



### Current research questions include:

- ◆ What types of mitochondrial gene movements are most common, and what does that tell us about how genes move?
- ◆ Do mitochondrial gene movements reliably reconstruct evolutionary history?
- ◆ What other factors, both biological and mutational, are associated with increased gene movement?
- ◆ Can DNA reveal the evolutionary relationships among certain insect groups?
- ◆ Can we use DNA sequences to distinguish insect species that are morphologically identical?
- ◆ Can we develop diagnostic tests to distinguish forensically important insects?



## MOLECULAR BIOLOGY

