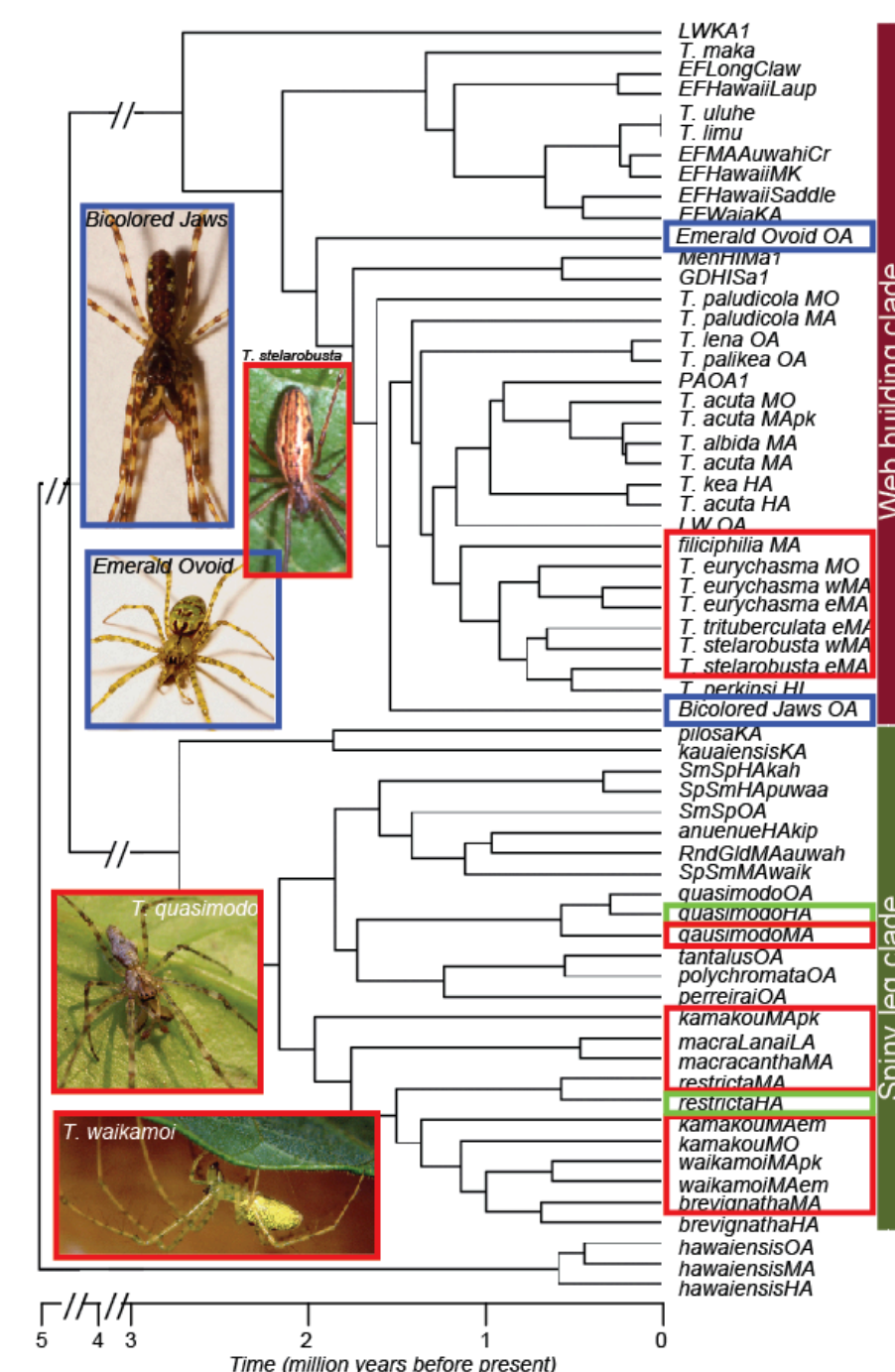


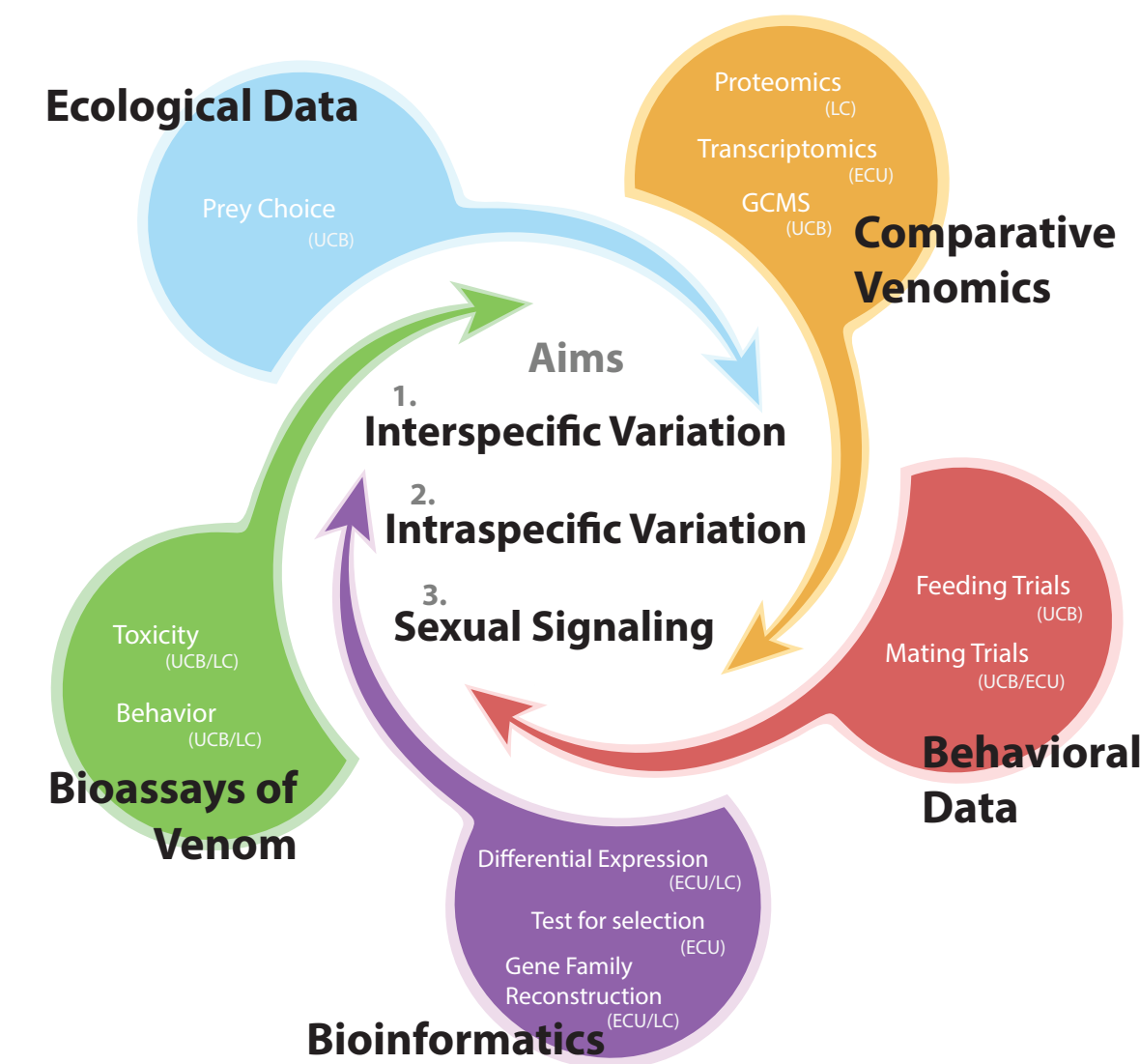
## Using arthropods to investigate the processes that create, shape, and maintain biodiversity

### Venomics

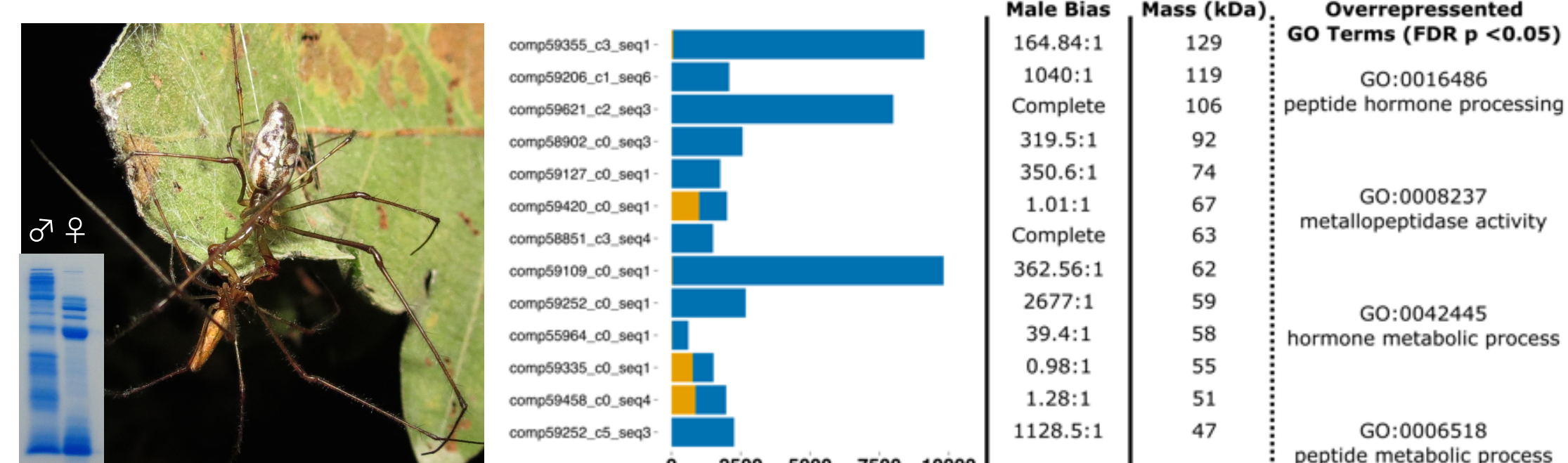
- Venoms as key characteristics allowing the diversification of spiders, centipedes, & robber flies



Phylogeny of Hawaiian *Tetragnatha* showing taxa to be sampled. In red boxes from Maui, green Big Island, blue Oahu. Web building clade shown by vertical maroon bar; spiny leg clade (wanderers) by green.



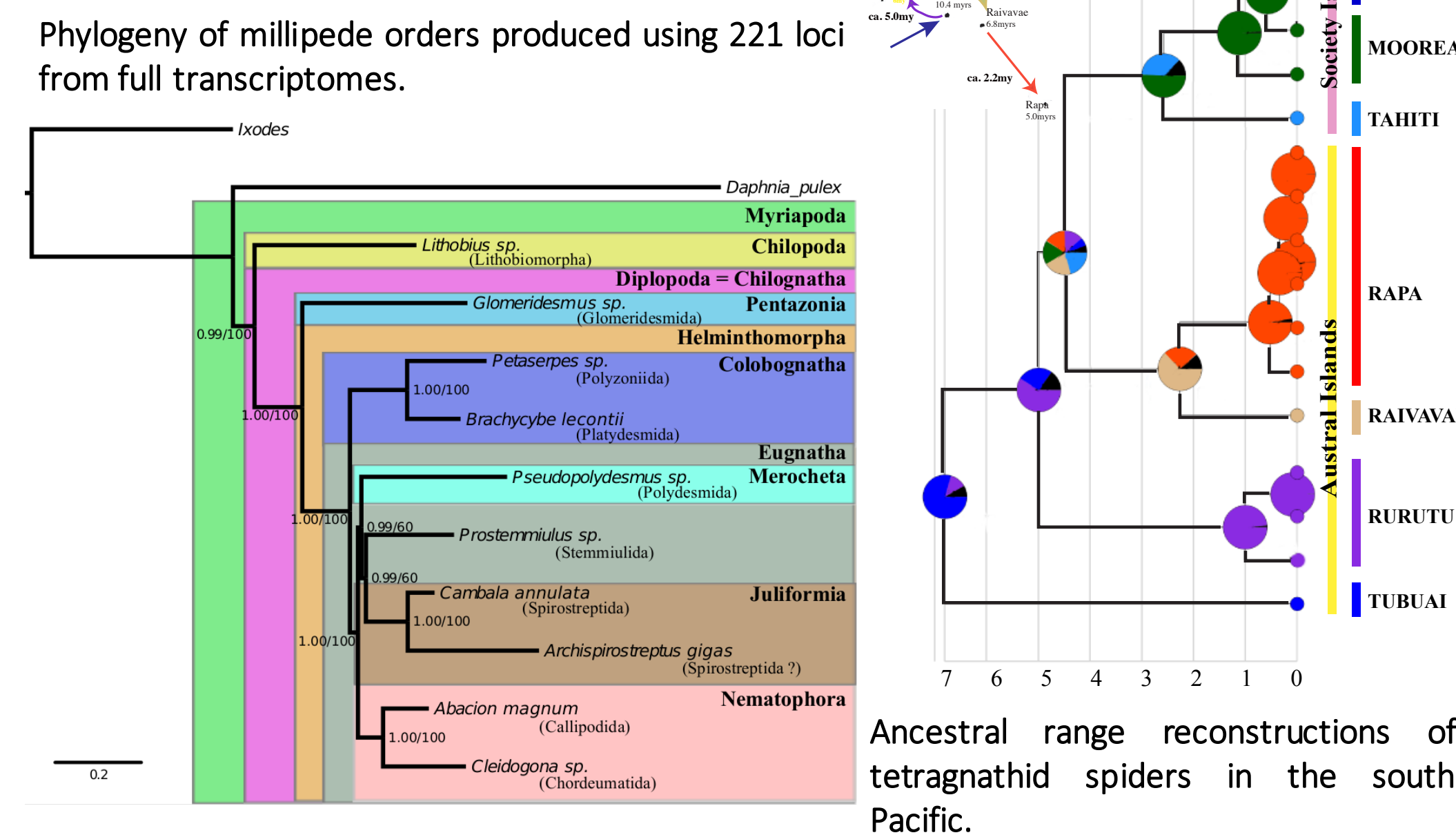
- Venom components as sexual signals in tetragnathid spiders



High molecular weight (>43 kDa) peptides exclusive to mature male venom. Count data from read mapping to transcriptome contigs shows the extreme bias in male expression of these proteins. Additionally, four GO terms were overrepresented, and two are involved in hormone processing, indicating potential sexual signaling. Male data are blue; female data are orange.

### Phylogenomics

- Phylogenomics of understudied arthropod taxa



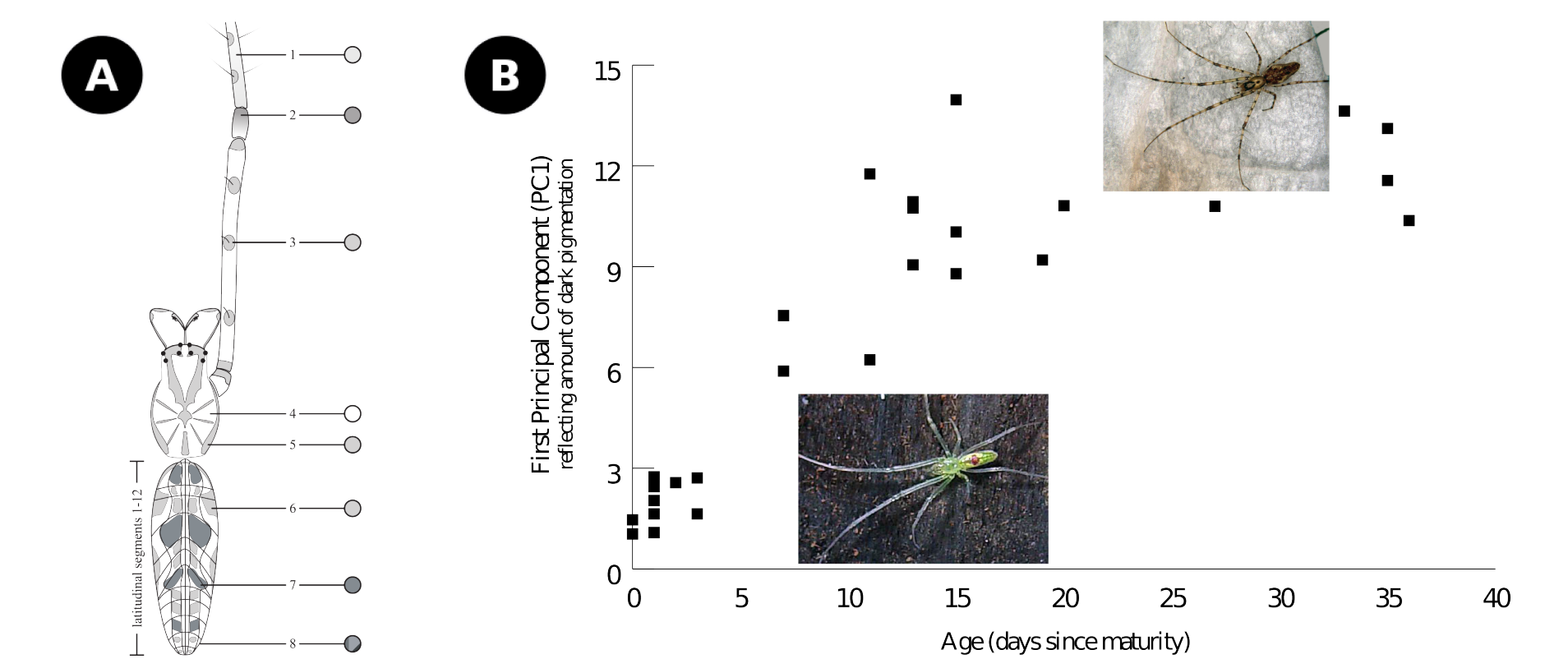
### Bioinformatics

- Developing new tools to analyze large-scale biodiversity data.

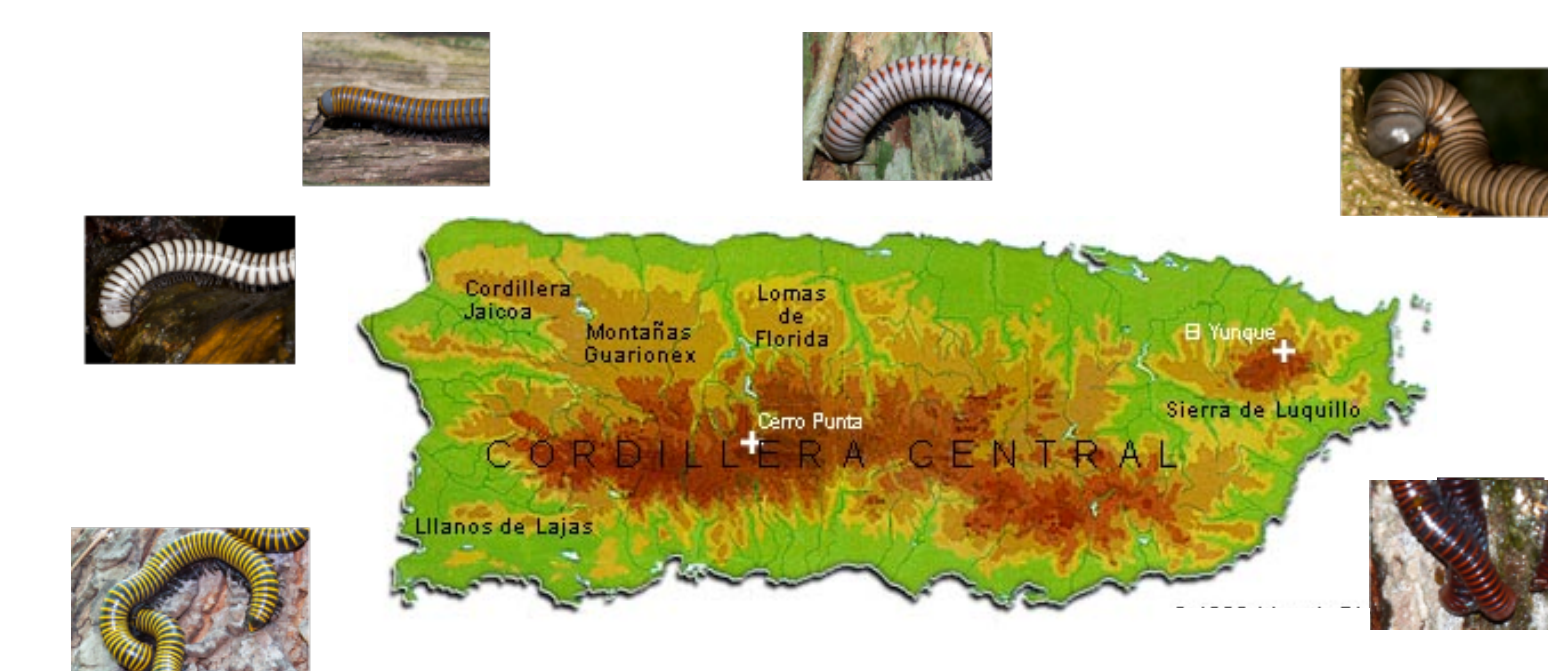
**COATS: C**reating **O**rthologous **A**lignments from **T**ranscriptome **S**equences

### Evolutionary Genomics

- Color evolution in adaptive radiations

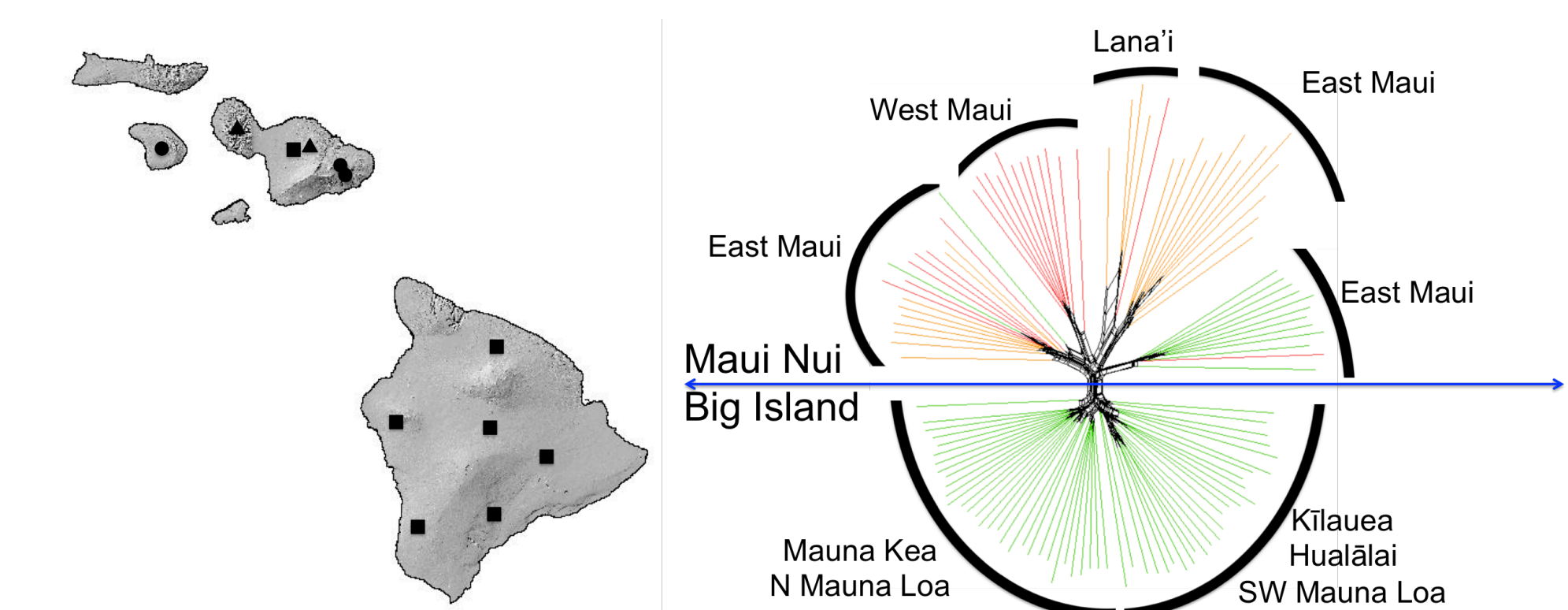


Maturity associated color change in Hawaiian *Tetragnatha* spiders. Transcriptomic analyses revealed 28 loci with signatures of selection potentially involved in the color-switching phenotype.



*Anadenobolus arboreus* color morph diversity in Puerto Rico.

- Population genomics



Population genomic analysis of *Tetragnatha* spiders on Maui Nui and the big island of Hawaii revealed more complex phylogeography than previously known.

