

Firefly genomics and transcriptomics

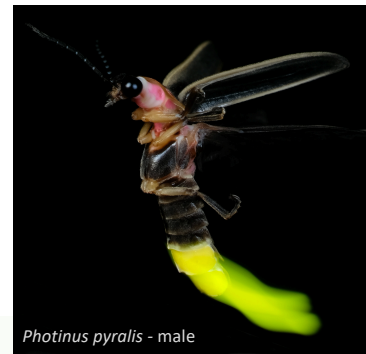
Background:

GENOMICS:

Fireflies are bioluminescent beetles well known for their production of light during courtship behavior. Yet, there is a big knowledge gap about adaptational processes in this group, their demographic history and migratory patterns. By generating new genomes and whole genome re-sequencing data we want to understand their colonization patterns and the genetic basis of adaptation.

TRANSCRIPTOMICS:

Some firefly species show a mild sexual dimorphism, whereas others show extreme sexual dimorphism between the sexes, with females neotenic. How are these sexually dimorphic traits maintained within species? What are the selective forces acting on sexually dimorphic traits? We want to tackle these questions using transcriptomic data and modelling.



Projects for IRT1-3 + master thesis can be developed for the following topics:

- Firefly genome assembly – comparative genomics.
- Selective sweep screening.
- Demographic inference.
- Species delimitation models on European and Neotropical species.
- Karyotyping (field work in summer + lab work).
- Gene expression analysis across species.
- Phylogenomics.



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