

**From: Leila Teruko Shirai, Ph.D. (André Freitas lab, State University of Campinas, Brazil)**

**To: Mark Rothschild, Center for Systematic Entomology**

**CSE Grant Report**

**Title: The contribution of the developmental hierarchy in morphological diversification**

Dear Mark,

Below is my brief report resulting from my 4-day visit to Gainesville to study FSCA/Florida Museum Lepidoptera collections in September 2018, funded by the CSE. I deeply appreciate the US\$ 450 grant that allowed me to finish collecting data for my project.

Best regards,

Leila Shirai

Thanks to the CSE grant I was able to visit the McGuire Center for Lepidoptera and Biodiversity (which also houses FSCA Lepidoptera collection) in September 2018. Even though I spent only a few days working in the collection, the visit was very productive, and two publications partially resulting from this visit are currently pending submission.

My aim was to test whether different stages of development equally affect the diversification of a phenotype. To address this question, I am examining one of the wing color pattern elements commonly found in wings of Nymphalidae butterflies, the eyespots, also exploring the homology of developmental processes in eyespot formation in Saturniidae moths.

After my visit to Gainesville, followed by additional 5 days at the American Museum of Natural History, NY (neither of which would be possible without the CSE grant), I was able to complete data collection of eyespot traits for all 399 species for my nymphalid study, and was also able to work with my collaborator on an additional project involving eyespots of Saturniidae.

Upon return, I have been processing the morphometric and scanning electron microscopy data from the photographs taken at museums I visited, as well as developing RevBayes scripts for ancestral reconstruction analyses. These are being currently done, with exciting preliminary results. I would like to acknowledge CSE funding in the two pending manuscripts.