The 2013 SysEB Student Travel Awardees

Ana Jesovnik, University of Maryland

My name is Ana Jesovnik, and I am a PhD student at University of Maryland. My research interests are evolutionary biology and natural history of ants. For my thesis I am studying a fungus growing ant genus *Sericomyrmex*, a fascinating group mostly distributed in South and Central America. Apart from taxonomic revision and phylogeny of ants and their fungal cultivars, I am studying their nest architecture. My work so far has revealed great variation in nest size and architecture, suggesting that nest construction may be an important component to *Sericomyrmex* biology. ESA Student travel grant will enable me to travel to Brazil, where I will spend some time in the field excavating nests, which is a very important not just for nest architecture studies but also because it is the only way to collect the fungus. In Brazil I will also visit an important ant collection in Bahia, which will facilitate my taxonomic work.

Phillip Barden, Richard Gilder Graduate School at the American Museum of Natural History

I am a current PhD candidate in the Richard Gilder Graduate School at the American Museum of Natural History where I work on amber ant fossils. I am interested in patterns of diversification among stem- and crown-group ants and so my research is primarily taxonomic and systematic: working to describe new amber specimens and contextualize them with reference to extant ants. Recently discovered ~50 million year old Cambay amber from India provides a valuable window into ant evolution at a time when ants are thought to have undergone a major radiation. Funding from the SysEB travel grant will allow me to visit the Paleontological Institute, Russian Academy of Sciences in Moscow which houses the world's most complete collection of Baltic amber dated at ~42 million years old. While they do not overlap temporally, Cambay and Baltic amber are the two Eocene deposits closest in age for study. By comparing the Indian amber ant assemblage with Baltic amber fauna, it will be possible to more accurately describe new fossil taxa, and better understand ant diversity as it changed over time.

Ricardo Mariño-Pérez, University of Central Florida

I am a third-year PhD student at The Song Laboratory of Insect Systematics and Evolution and as a part of my dissertation I have generated a morphological phylogeny of

Pyrgomorphidae, a family of grasshoppers and I have found that chemical defense has evolved multiple times but is not always correlated with warning coloration. The genus *Sphenarium* is a good model to study this situation because presents species with bright coloration that presumably could be considered as a case of aposematism and species that exhibit dull coloration and even are used for human consumption. The SysEB Student Travel Award will allow me to conduct a trip to Central and Southern Mexico in order to collect six species of *Sphenarium* and test the hypothesis that aposematic coloration and chemical defense are positively correlated by doing *in situ* color quantification using spectophotometry and by collecting haemolymph and regurgitant samples to conduct gas chromatography looking for Pyrrolizinide alkaloids.

John Hash, University of California, Riverside

I am a Ph.D. candidate at University of California, Riverside in the Department of Entomology. I am interested in all aspects of phorid flies, but my dissertation research focuses on systematics and natural history of *Myriophora* (Diptera: Phoridae). *Myriophora* are true parasitoids of chemically defended millipedes, and the genus is among the most species-rich in Phoridae, with an estimated 200 species. The SysEB Student Travel Award enabled me to collect new host records and fresh specimens for molecular sequencing at La Selva Biological Station in Costa Rica. Furthermore, I was able to collect data on host location behavior, oviposition behavior, and larval development. These new natural history data will be evaluated in a phylogenetic context to understand key questions regarding the evolution of millipede parasitism in *Myriophora.*

Fredrick Larabee, University of Illinois, Urbana-Champaign

I am a PhD candidate in the Department of Entomology at the University of Illinois, Urbana-Champaign, and am interested in the functional morphology and evolution of insect mouthparts. For my dissertation, I am researching the evolution of morphology in the trap-jaw ant genera *Anochetus* and *Odontomachus*. The mandibles of these ants snap shut at some of the fastest speeds ever recorded for an animal movement and are used for prey capture, nest defense, and can even be snapped against the ground to escape from predators. I am interested using phylogenetic comparative methods to understand how the trap-jaw morphology has evolved and how it has affected patterns of species diversity in this group. Support from SysEB has helped me travel to the Smithsonian Institution National Museum of Natural History, where I am currently working on a species-level molecular phylogeny of these two trap-jaw ant genera.