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*Can transposons drive genomic mosaicism between castes in *Solenopsis invicta*?*

**Ni-Chen Chang, John Wang**

Transposons are expressed highly in neural tissues and drive transcriptomic heterogeneity in the brains of humans and *Drosophila*. The neural diversity in the brain caused by transposon insertions might contribute to behavioral differences between individuals. Whether such behavioral differences are beneficial is hard to evaluate in solitary species. However, testing this in social species may be possible. In ants, females are divided into two castes: queens who reproduce and workers who perform tasks such as nursing larvae, foraging for food, and defending the nest. Because colony efficiency is determined in part by the efficient partitioning of labor among workers, it may be beneficial to have a more behaviorally diverse work force. Thus, we hypothesize that transposon gene expression would be higher in the brains of workers than in queens. We are using the fire ant (*Solenopsis invicta*) to test this possibility. To date, we have compared transposon expression in the brain between virgin queens and workers from one colony using Illumina RNA-seq. Our initial analysis has revealed 2,029 putative transposons expressed out of 95,599 total unique transcripts (2%). Of these, 917 of the transposons potentially exhibited differential expression between castes, although the total expression of all transposons between the two castes was not significantly different. The major expressed classes of transposons in both castes were DNA transposons of the P-element and mariner families. Currently, to obtain more power we are conducting more biological repeats to determine whether transposon expression differences exist between the two castes.