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**R Davidson, M Lawhorn, J Rusinko\*** (rusinko@hws.edu) and **N Weber**. *Efficient Quartet Systems*.

Quartet trees displayed by larger phylogenetic trees have long been used as inputs for species tree and supertree reconstruction. Computational constraints prevent the use of all displayed quartets in many practical problems with large numbers of taxa. We introduce the notion of an Efficient Quartet System to represent a phylogenetic tree with a subset of the quartets displayed by the tree. Using performance tests on simulated datasets, we demonstrate that using an Efficient Quartet System to reduce the number of quartets in both summary method pipelines for species tree inference as well as methods for supertree inference results in only small reductions in accuracy. (Received March 20, 2017)