Systems Biology Research Symposium
Oral Presentation Session

Grand Ballroom
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7:00-8:30pm

Phylogeny of Photosynthetic Euglenoids – What Have We Learned?

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Molecular phylogenetics has revolutionized the way we look at euglenoid systematics. Since the generation of the first single gene trees (SSU rDNA) a decade ago, it was clear that taxonomies based solely upon morphological characters were incongruent with molecular phylogenies. This talk will follow the progression from single gene to multigene trees and illustrate the impact molecular phylogenetics has had on the systematics of photosynthetic euglenoids. Within the past five years alone, molecular phylogenetic studies have uncovered several cryptic euglenoid species, resulted in the creation of new genera (*Discoplastis, Euglenaria*), resurrected the lost genus *Monomorphina* and created/redefined new families within the Euglenales. In addition to their importance upon systematics, the broader impact of these phylogenetic studies is that they can be used to explore toxin production and fishkills, the generation of antibacterial compounds, the production of anticancer compounds, the evolution of novel photosynthetic pigment markers and the use of compounds produced by euglenoids in bioproducts.

Key words: euglenoid, euglenozoa, phylogenetics, phylogeny, systematics