**LIVING IN A POLARIZED WORLD: PHYLOGENY AND EVOLUTIONARY HISTORY OF NEUROPOGONOID *Usneas* (Parmeliaceae, Ascomycota)**

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*Usnea* ca. 600 spp. is one of the largest genera of lichen-forming fungus within the family of Parmeliaceae. The exceptionally high plasticity in morphological characters of *Usnea* has traditionally been a challenge for systematists and taxonomists. For example, it has been discussed whether neuropogonoid *Usnea* species represent an independent genus or a consolidated group within *Usnea* based on their characters of darkly pigmented upper parts and dark brown apothecial discs. DNA sequencing in combination with detailed morphological studies have suggested that these characters evolved independently in different lineages of *Usnea* as an adaptive response to harsh environmental conditions rather than representing key group-defining innovations. This inclusion of molecular phylogenetics undoubtedly has boosted evolutionary insights such us the largely debated species-pair concepts also present in neuropogonoid *Usneas* (e.g., *U. antarctica* and *U. aurantiacoatra*). However, the nature of symbiotic organisms make it necessary to adjust existing cutting-edge sequencing techniques and analyses to metagenomic sequencing data. Nevertheless, recent studies have unveiled the power and robustness of reference-based RADseq using metagenomic DNA to resolve phylogenetic relationships among closely related symbionts. Following these previous studies, we have used reference-based RADseq to obtain representative genome fragments for over 600 specimens of neuropogonoid *Usneas*. Our main aim is to reconstruct the evolutionary history of this group to address these specific questions: What is the species delimitation of neuropogonoid *Usneas*? What is the spatio-temporal evolutionary scenario for neuropogonoid *Usneas*? What is the level of gene-flow between geographically separated populations?

Funding: Robert A. Pritzker Center for Meteoritics and Polar Studies and Tawani Foundation