## 1172-92-287

Elizabeth S Allman<sup>\*</sup> (e.allman@alaska.edu), Department of Mathematics and Statistics, PO Box 756660, Fairbanks, AK 99775-6660. Overview of the Multispecies Coalescent Model on trees and networks, including some open problems in Phylogenetics.

The multispecies coalescent model, or MSC, is used to model a phenomenon observed in many large multilocus datasets constructed from molecular sequences: gene trees are discordant with each other and with the underlying species tree. That is, gene trees inferred to display the evolutionary relationship of orthologous DNA segments sequenced from a full genome of an individual often disagree topologically and metrically with each other, and with the species tree that shows the true evolutionary relationships between species of individuals. This talk will give an introduction to the MSC model with emphasis on its extension to species networks, and discuss some successes and challenges for sound inference of species relationships. No special knowledge will be assumed, and all are welcome. (Received August 30, 2021)