



The University of Chicago  
Department of Statistics  
Seminar Series

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**Statistical Foundations of Distance-based Phylogenetics**

**MONDAY, November 10, 2008 at 4:00 PM**  
**133 Eckhart Hall, 5734 S. University Avenue**  
*Refreshments following the seminar in Eckhart 110.*

**ABSTRACT**

We review some of the popular methods for distance-based phylogeny reconstruction with a focus on the statistical theory underlying the methods. In particular, we discuss least squares approaches to the minimum evolution principle, and the simple (and elegant) formulas for the resulting estimators. Our main result unifies many “accidental” discoveries in the area, and that provides a foundation for understanding the popular neighbor-joining algorithm in phylogenetics.