1155-05-48 **Daryl R DeFord*** (ddeford@mit.edu). *Multiresolution Redistricting and Municipality Preservation.* Preliminary report.

Geospatial data for political redistricting is reported at several levels of resolution, from census blocks to voting precincts to county boundaries, that are not always compatible. This talk discusses two problems related to this inhomogeneity of scale. First, we examine the impact of resolution choice on the behavior of Markov chain sampling methods for generating ensembles of districting plans. Provided that there are sufficient permissible plans using fixed resolution units, the observed distributions of partisan metrics are similar using the ReCom method, while the boundary flip method returns inconsistent results. Secondly, we analyze municipality preservation rules that enforce rigid county boundaries and describe their impacts on minority representation. In order to accomplish this task, we introduce new algorithmic procedures for generating compliant ensembles. This analysis is supported with empirical results taken from real-world data in states where related legislation has been proposed with concerns for racial and partisan representation. (Received December 01, 2019)