

# Penn/Temple Probability Seminar

## *Splitting hairs (with choice)*

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Tuesday, September 8, 2015  
2:30-3:30pm, Rittenhouse Lab 3C8 (Penn)

Sequentially place  $n$  balls into  $n$  bins. For each ball, two bins are sampled uniformly and the ball is placed in the emptier of the two. Computer scientists like that this does a much better job of evenly distributing the balls than the “choiceless” version where one places each ball uniformly. Consider the continuous version: Form a random sequence in the unit interval by having the  $n$ th term be whichever of two uniformly placed points falls in the larger gap between the previous  $n - 1$  points. We confirm the intuition that this sequence is a.s. equidistributed, resolving a conjecture from Itai Benjamini, Pascal Maillard and Elliot Paquette. The history goes back a century to Weyl and more recently to Kakutani.