1116-05-146 **Kirsten Hogenson*** (kahogens@iastate.edu) and **Ryan R Martin** (rymartin@iastate.edu).
A random version of the r-fork-free theorem.

Let $\mathcal{P}(n)$ denote the set of all subsets of [n] and let $\mathcal{P}(n,p)$ be the set obtained from $\mathcal{P}(n)$ by selecting elements independently at random with probability p. The r-fork poset is the family of distinct sets F, G_1,...,G_r such that F$\subset G_i$ for all i. De Bonis and Katona showed that, for fixed r, any (r+1)-fork-free family in $\mathcal{P}(n)$ has size at most (1+o(1))$\binom{n}{\lfloor n/2 \rfloor}$. In this paper, we prove a similar result for (r+1)-fork-free families in $\mathcal{P}(n,p)$. In particular, if $pn \to \infty$, then with high probability, the largest (r+1)-fork-free set in $\mathcal{P}(n,p)$ has size at most (1+o(1))p$\binom{n}{\lfloor n/2 \rfloor}$. This result is influenced by the work of Balogh, Mycroft and Treglown, who proved a random version of Sperner's theorem using the hypergraph container method. (Received August 06, 2015)