

**The University of Chicago**  
**Department of Statistics**  
**First Year PhD Presentation**

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**The Family Size Process, Ewens Sampling Formula,  
and Fishers Distribution on Species**

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**ABSTRACT**

The family size process is a type birth and death process that allows migration. In this presentation, I will show how the stationary distribution of this process can be used to derive the Ewens distribution on integer partitions (also known as Ewens sampling formula). In addition, the relation between the number of species and individuals in samples (Fisher, 1943) and its connection to the family size process will also be discussed.