

# Erdős the Calvinist: Predestined Subgraphs

Jacob Manske  
Iowa State University

24 October 2006

ABSTRACT: This is presentation of some of the results found in “Induced Subgraphs of Given Sizes” (Erdős, Füredi, Rothschild, Sós, 1999). We say that  $(n, e) \rightarrow (m, f)$ , an  $(m, f)$  subgraph is forced, if every  $n$ -vertex graph of size  $e$  has an  $m$ -vertex spanned subgraph with  $f$  edges. This problem finds its roots in Turán’s theorem. Hence, we present the Turán Theorem and two pairs  $(m, f)$  that are unavoidable.