1123-05-171 **Jacques Verstraete*** (jacques@ucsd.edu), 9500 Gilman Drive, La Jolla, CA 92093-0112, and **Michael Molloy** and **Benjamin Sudakov**. *On Relative Turán Numbers.*

The *relative Turán number* for graphs G and F, denoted $\mathrm{ex}(G,F)$, is the maximum number of edges in an F-free subgraph of G. In the special case $G = K_n$, we recover the well-researched Turán numbers $\mathrm{ex}(n,F)$. In this talk we outline a proof for many graphs F, including all graphs of diameter at most three, of the conjecture of Foucaud, Krivelevich and Perarnau that every graph G of minimum degree d and maximum degree Δ has a spanning F-free subgraph of minimum degree $\Omega(d \cdot \frac{\mathrm{ex}(\Delta,F)}{\Delta^2})$. One of the ingredients is our proof that if G is a Δ-regular graph, then G has a spanning subgraph of minimum degree at least $\Delta/24$ which has a Δ-coloring such that no two vertices at distance at most two have the same color. Our methods also show for many graphs F that $\mathrm{ex}(G,F) \geq d \cdot \frac{\mathrm{ex}(\Delta,F)}{e\Delta^2}$, which is tight up to a factor $1/e$. (Received August 30, 2016)