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Balazs Szegedy* (szegedyb@gmail.com), Toronto, M5S2E4, Canada, and **Laszlo Lovasz** (lovasz@cs.elte.hu), Budapest, H-1117, Hungary. *Forcing Randomness and Structure in Graphs.*

A famous theorem by Chung, Graham and Wilson says that if a graph has edge density close to $1/2$ and four cycle density close to $1/16$ than the structure of the graph is close to "random looking". The following natural question arises: What structures can be forced upon a graph by a finite list of prescribed subgraph densities? The following interpretation of the same question appears in extremal combinatorics: which graphs are unique solutions of extremal problems? It turns out that many of these structures are interesting combinations of algebraic or fractal-like structures and randomness. We present recent results and intriguing open problems in this topic. This is joint work with Laszlo Lovasz. (Received January 30, 2008)