

## **abstract**

Computer Science/Discrete Mathematics Seminar I  
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

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I will describe some recent results and problems regarding influence of sets of variables on Boolean functions: In 1989 Benny Chor conjectured that a balanced Boolean function with  $n$  variables has a subset  $S$  of size  $0.4n$  with influence  $(1-c)^n$  where  $c < 1$ . The existence of a set  $S$  with influence  $(1-1/n^c)$  for some  $c > 0$  follows from a theorem by Kahn, Kalai and Linial (KKL). I will present a recent counterexample by Kahn and me showing that up to the identity of  $c$ , the KKL bound cannot be improved. I will discuss also relations with traces and with Sauer-Shelah theorem, some related new constructions with Jeff Kahn, and earlier constructions by Bollobas and Radcliffe and by Shelah and me. I will also discuss some conjectures with Kahn on the large threshold interval of a monotone Boolean function.