

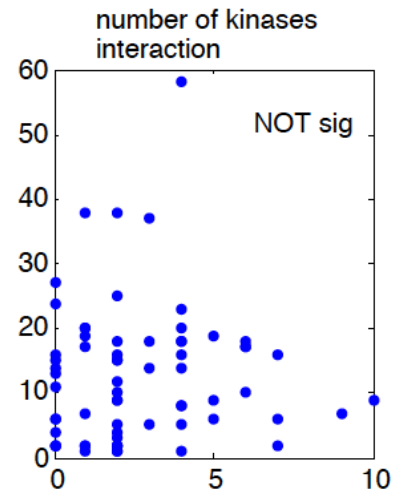
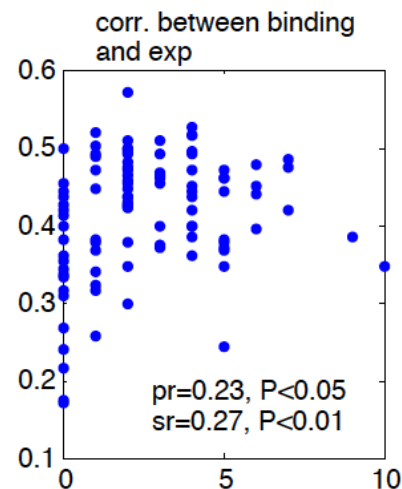
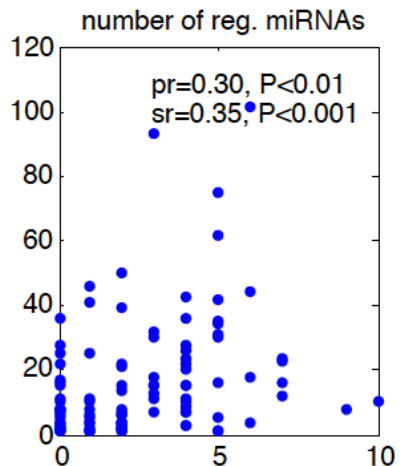
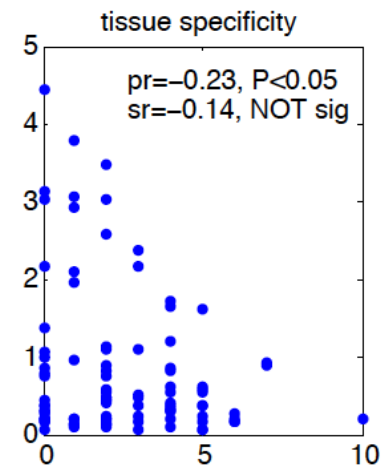
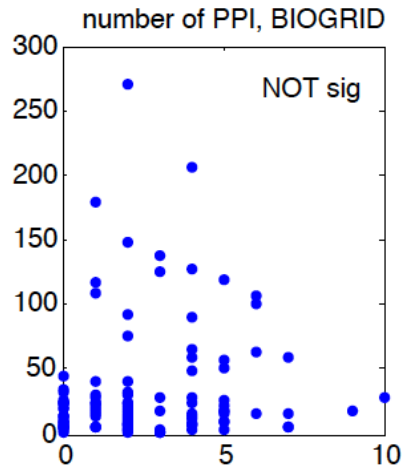
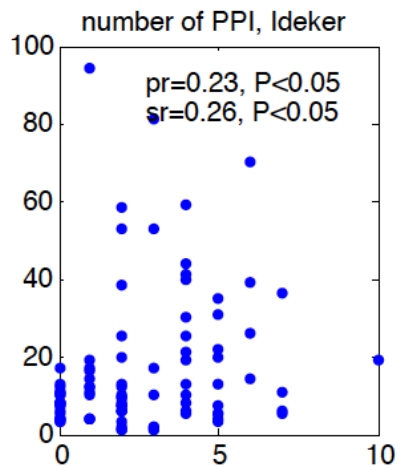
# Update of the ENCODE network

6/16/2011

# The Network

- ⊗ 428 ChIP-Seq tracks, with 119 unique transcription factors, in different cell lines or under different conditions
- ⊗ Target identification based on Chao's probabilistic framework, with q-value 0.01
- ⊗ 7 TFs are removed: CTCF, EP300, TAF1, TAF7, TBP, WRNIP1, XRCC4
- ⊗ TF network: 112 TFs, and 309 edges (compare with the previous version: 67 TFs, 1000 edges)
- ⊗ Properties of TFs: number of physical interacting partners (Ideker, BIOGRID), tissue specificity, number of regulating miRNAs, correlation of binding signals vs expression, number of kinase interactions, ... (structural properties: disorder etc, evolutionary ...)

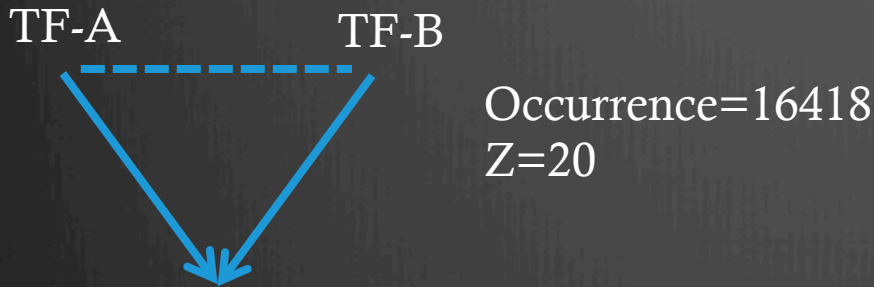
# Correlating TF properties with network out-degree



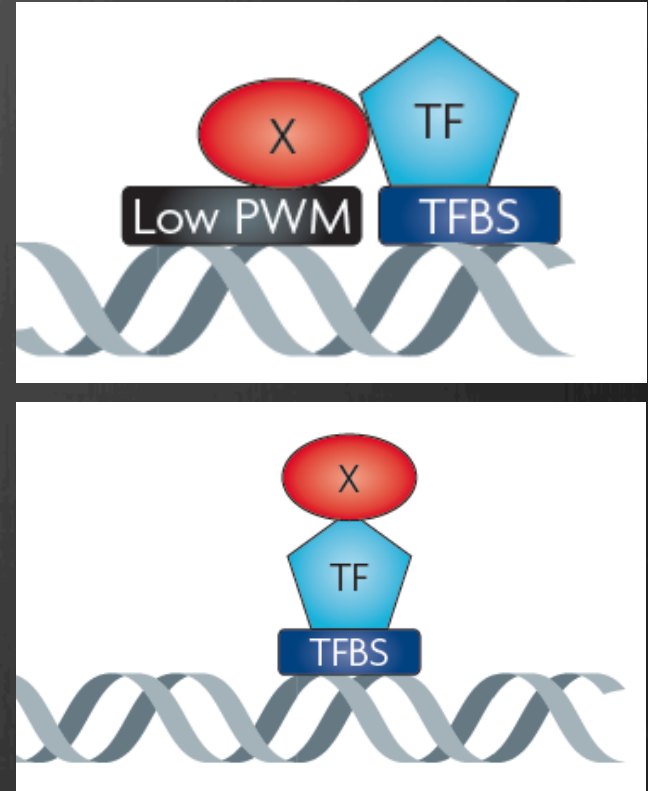
# Remarks:

- ⊗ Previous version: K562, 67 TFs, 1000 edges, we didn't observe the correlations
- ⊗ NO correlation between TF properties and its in-degree (in-deg is not a genome-wide property)
- ⊗ Individual nodes -> pairwise correlation -> modules (motifs)  
-> global (hierarchy)

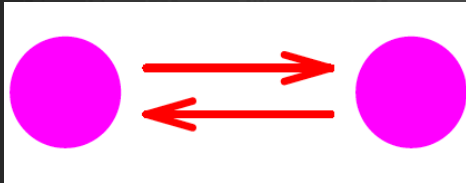
# Integrate with PPI data



- ⊗ Look at individual motifs, distinguish the two scenarios
- ⊗ Using information content of the PWMs, identify master regulators, and tissue specific guys
- ⊗ The filtered network might do a better job for this analysis



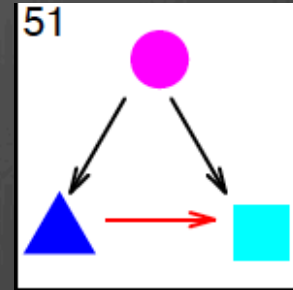
# Enriched motifs



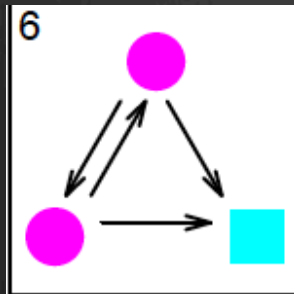
N=40, z=6.96



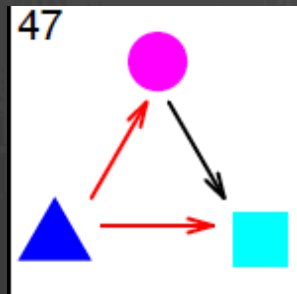
Not sig



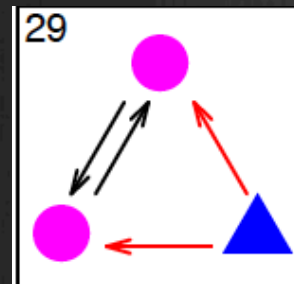
Not sig



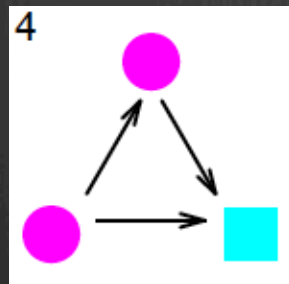
N=4203



z=2.65



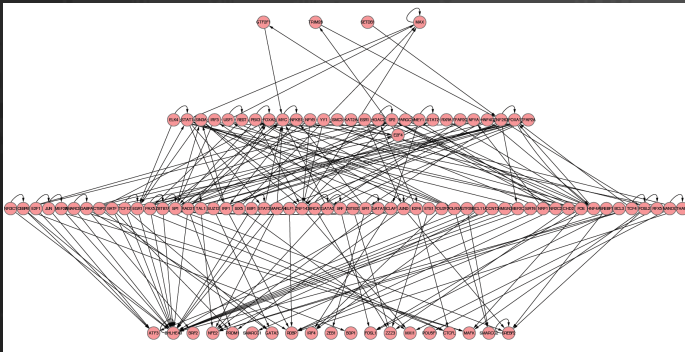
N=110



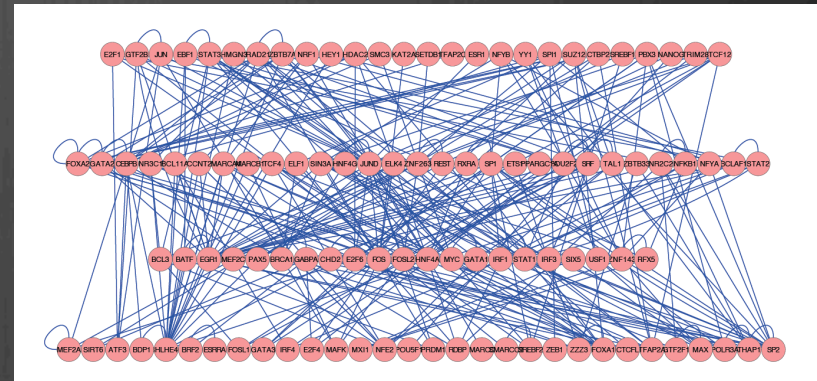
z=28

# Zoo of Hierarchies

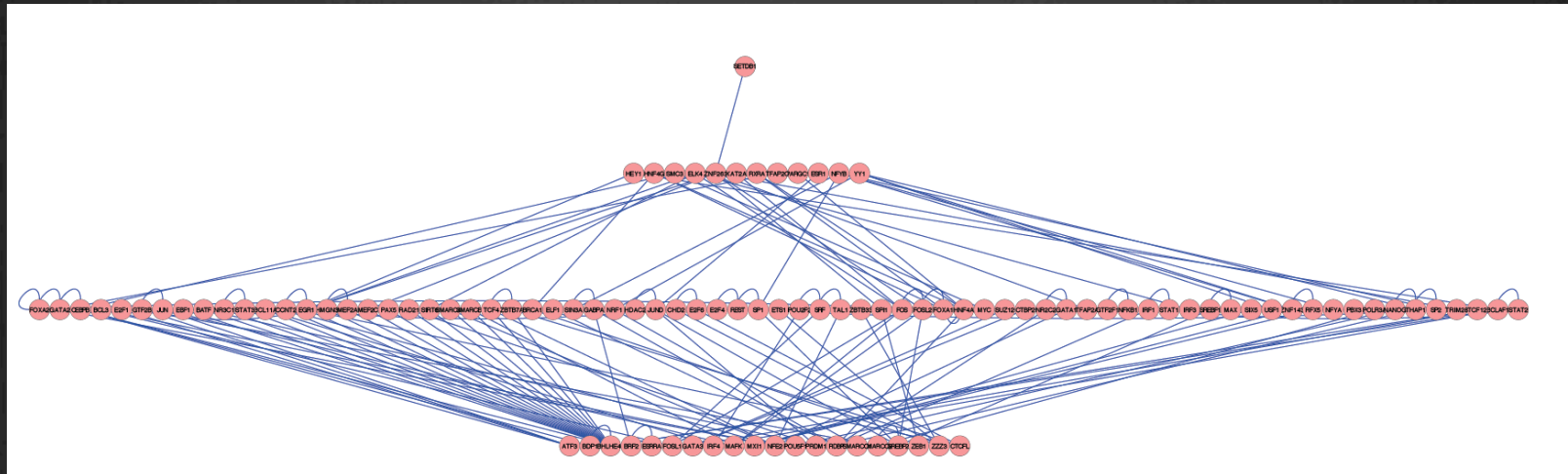
Leaf removal algorithm



Minimize feedback



Breadth first search



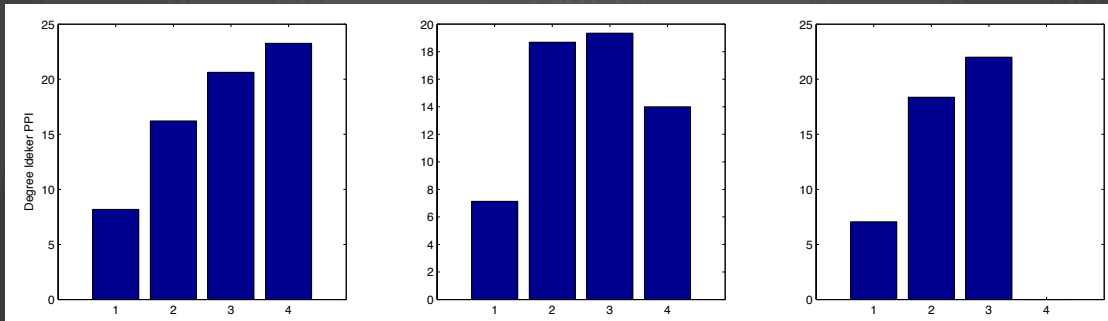
# TF properties wrt levels

MF

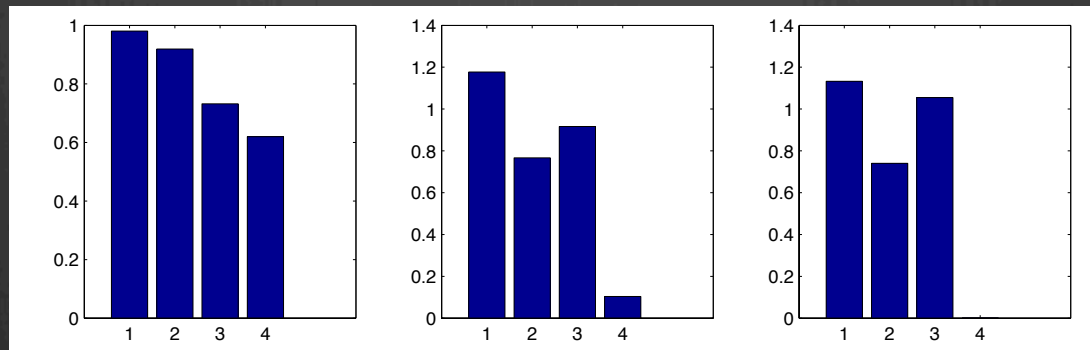
LR

BFS

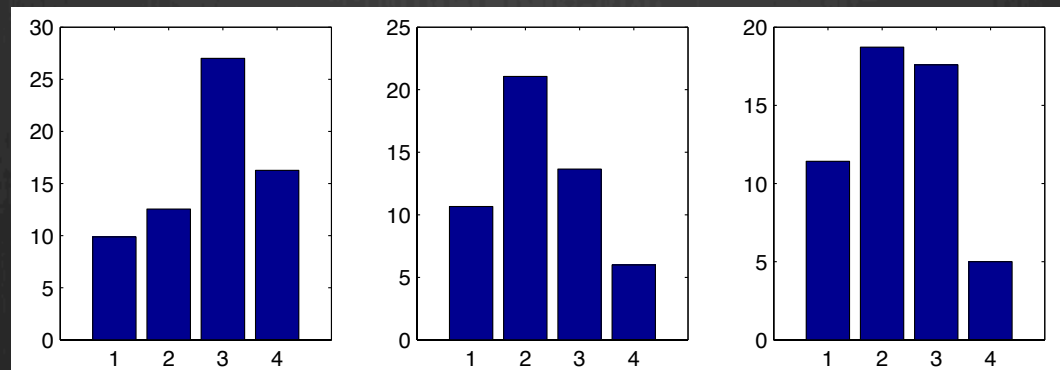
Number of PPI partners



Tissue specificity



Num. of miRNA regulators





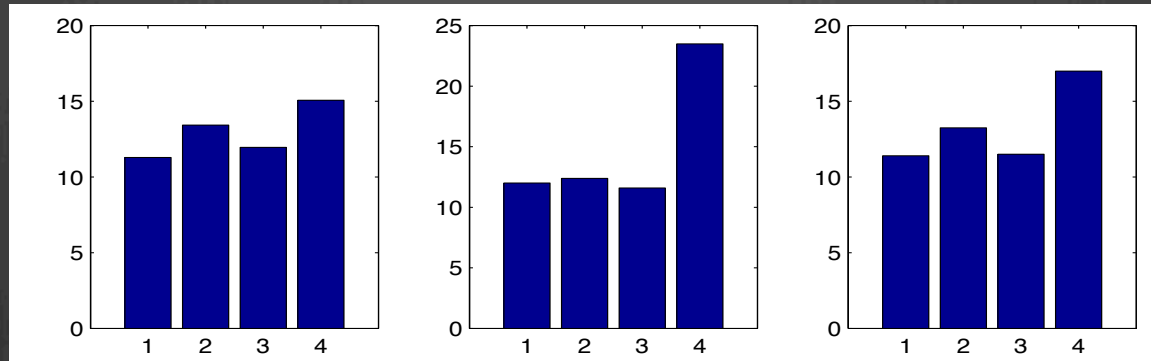
# TF properties wrt levels

MF

LR

BFS

Num of regulating kinases



Corr. With exp

