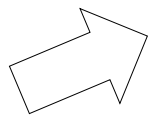
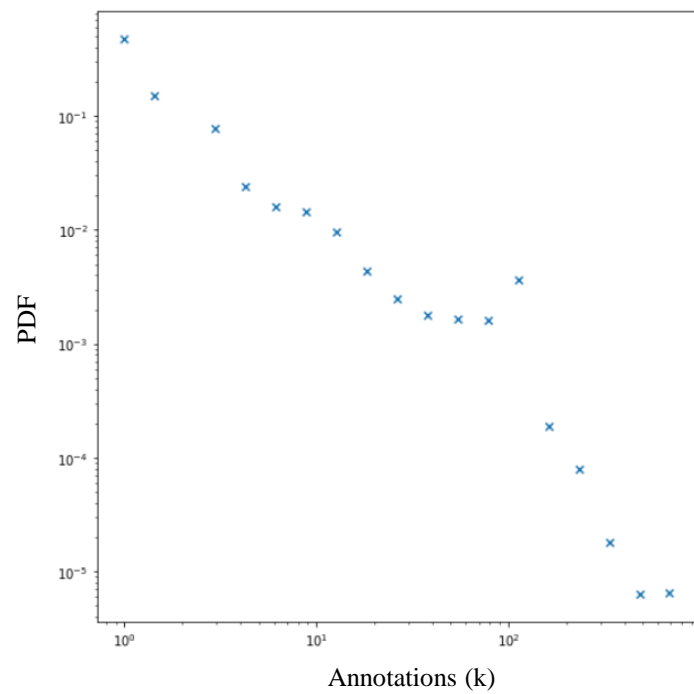
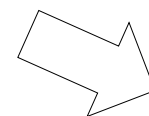


**A***Benchmark BindingDB data*

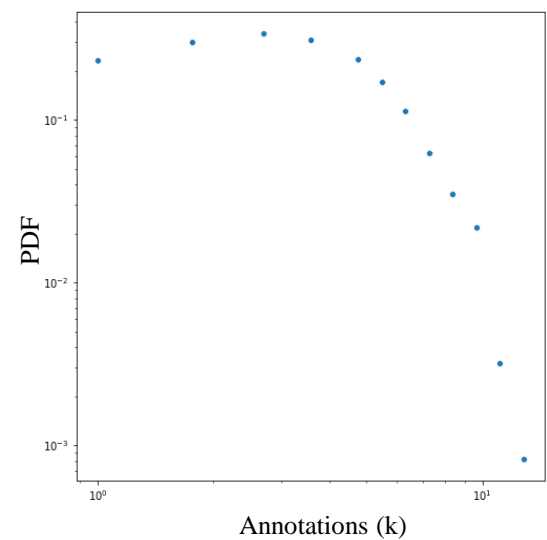
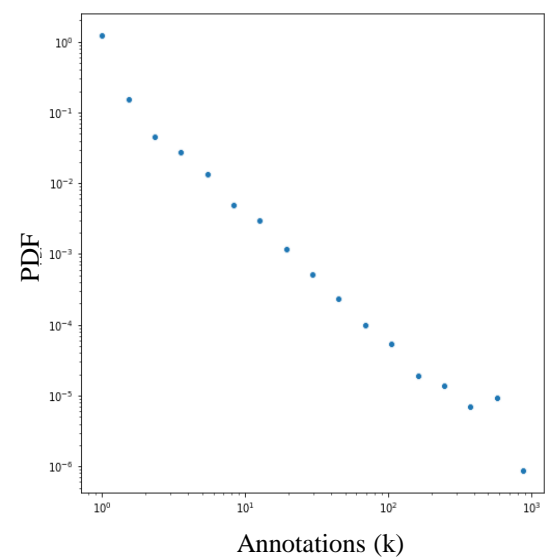
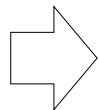
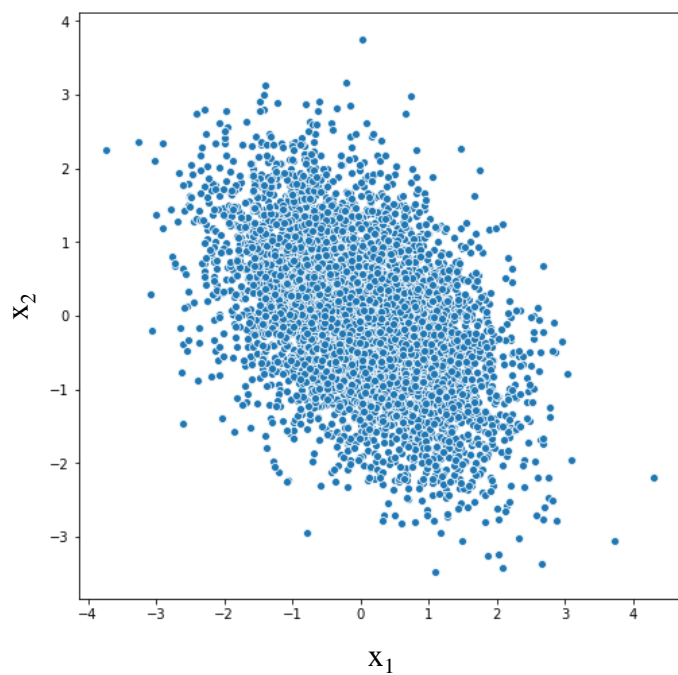
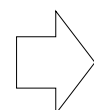
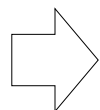
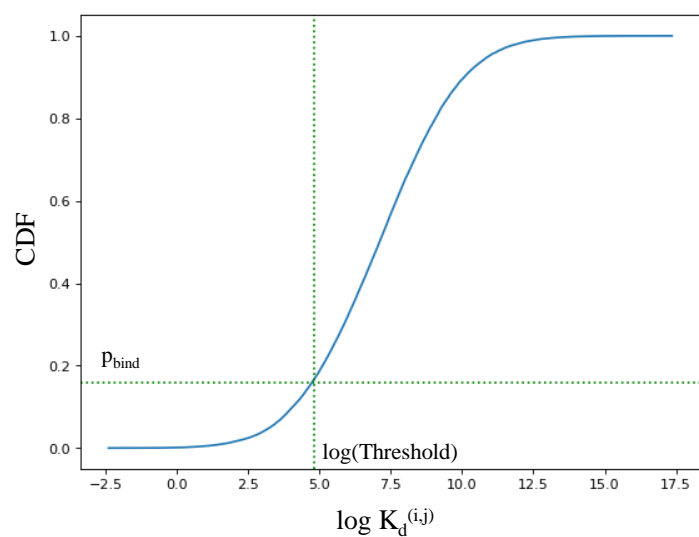
Protein degree sequence

 $\{d_1, d_2, \dots, d_N\}$ *Configuration Model*

Power law degree  
distribution with  
 $N=5,000$   
 $\gamma=2.84$   
 $k^{\min}=1$   
 $k^{\max}=1,033$

*ER Graph*

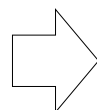
Poisson degree  
distribution with  
 $N=5,000$   
 $\langle k_p \rangle = 4.93$

**B***Gaussian Copula* $r_{\text{Spearman}} = -0.47$  $k_i = \text{degree\_seq\_CDF}^{-1}(U1)$  $\log(\langle K_d \rangle^i) = \langle \log(K_d) \rangle + \sigma_{\log(K_d)} * \text{Gaussian\_CDF}^{-1}(U2)$  $K_d^i$  $K_d^{(i,j)} = \sqrt{K_d^i K_d^j}$  $K_d^j$ **C** $K_d^{(i,j)} < \text{Threshold}$ 

Positive Edge

 $K_d^{(i,j)} \geq \text{Threshold}$ 

Negative Edge

*Unipartite Version*