

Abstract Submitted  
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**Regulatory Biophysics From Sequence Data** ANAND MURUGAN,  
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versity — We demonstrate a new technique for probing the function of a regulatory  
sequence, using ultra-high-throughput sequencing to generate large data sets of the  
activity of mutant sequences. An information theoretic data analysis technique is  
then used to model the activity, avoiding assumptions about noise in the experiment.  
We apply this technique to the well studied *lac* promoter in *E coli*. and characterize  
the specificities of the DNA binding proteins in physical units and infer their *in vivo*  
interaction energy.

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