



presents Guest Speaker:

**Martha Bulyk**

**Department of Medicine and Pathology, Harvard Medical School**

*Transcription factor - DNA interactions:  
cis regulatory codes in the genome*

The interactions between sequence-specific transcription factors (TFs) and their DNA binding sites are an integral part of the gene regulatory networks within cells. My group developed highly parallel in vitro microarray technology, termed protein binding microarrays (PBMs), for the characterization of the sequence specificities of DNA-protein interactions at high resolution. Using universal PBMs, we have determined the DNA binding specificities of >500 TFs from a wide range of species. These data have permitted us to identify novel TFs and their DNA binding site motifs, predict the target genes and condition-specific regulatory roles of TFs, predict tissue-specific transcriptional enhancers, investigate functional divergence of paralogous TFs within a TF family, investigate the molecular determinants of TF-DNA 'recognition' specificity, and distinguish direct versus indirect TF-DNA interactions in vivo. Further analyses of TFs and cis regulatory elements are likely to reveal features of cis regulatory codes important for driving appropriate gene expression patterns.

Introductory speaker (10 mins):

**Yvonne Li**, Jones lab, GSC, BCCA

**Thursday, March 17, 2010, 6:00 pm**

Gordon and Leslie Diamond Family Theatre,  
BC Cancer Research Centre,  
675 West 10th Avenue



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