• Describe the mechanisms underpinning microRNA regulation of gene expression in eukaryotic genomes.

• Compare and contrast the biogenesis and functions of microRNAs (piRNAs) and piwi-associated RNAs (piRNAs).

• Discuss the commonalities and differences between small non-coding RNA regulators in animal genomes.

• Long non-coding RNAs: transcriptional junk or important regulatory molecules ?

• Elaborate on roles of small and long noncoding RNA molecules in human disease with specific examples.

• Discuss the debate surrounding the ENCODE projects assertion that 80% of the genome is 'functional'

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