

## **A Gibbs Approach to Chargaff's Second Parity Rule**

Authors: Andrew Hart, Servet Martínez and Felipe Olmos

Speaker: Andrew Hart

### **Abstract:**

Chargaff's second parity rule (CSPR) asserts that the frequencies of short segments of DNA are the same as those of their reversed complements. Up to now, this hypothesis has only been observed empirically and there is currently no explanation for its presence in DNA strands. This talk describes work which proposes that CSPR is a probabilistic consequence of the reverse complementarity between paired strands being caused by the Gibbs distribution associated with the chemical energy between the bonds satisfying CSPR. A statistical test for studying the validity of CSPR under the Gibbsian assumption will also be discussed.