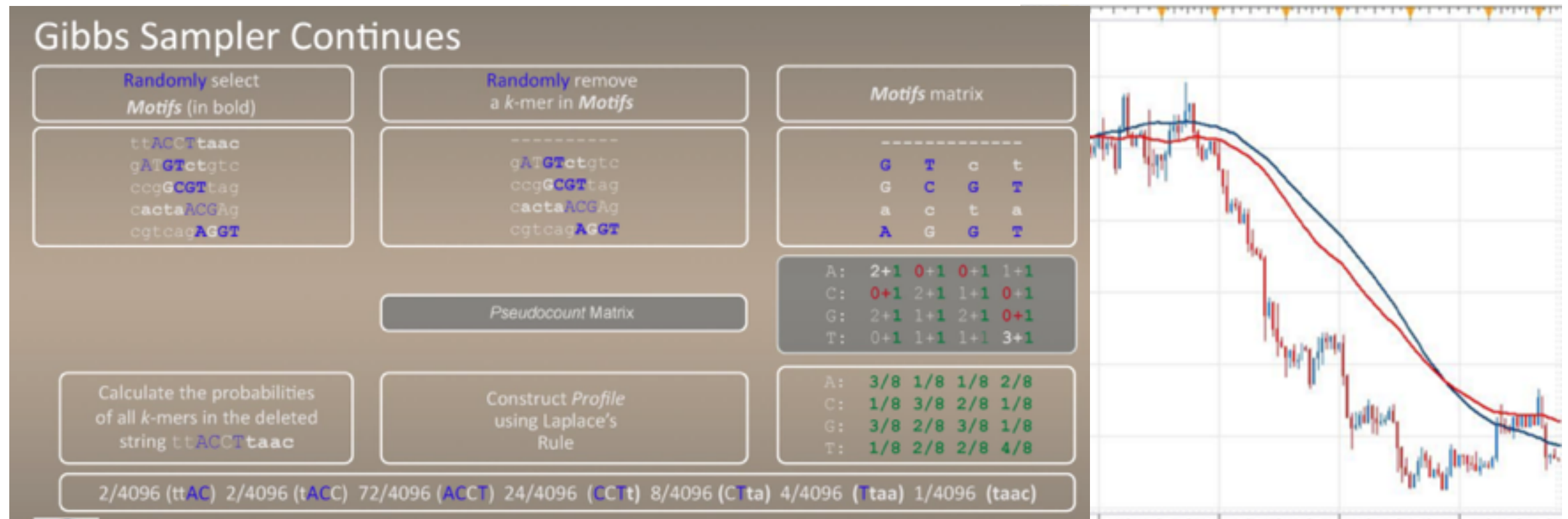


# Dynamic Gibbs Sampling to find motifs in DNA



- The Idea: use random guesses for aggressive search but as we near closer to the correct motif use a more deterministic approach
- Deterministic =  $\min(\text{HammingDistance}(\text{Consensus}, k\text{-mer}))$
- Conservative =  $\text{random}(\text{Deterministic}, \text{Gibbs})$ 
  - Probability of Gibbs =  $(\tan^{-1}(\text{Score\_Slope}))/90$
  - Probability of Deterministic =  $1 - \text{Gibbs}$
- Score\_Slope = Is the average slope of the graph of the score at each iteration