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**Seminar  
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**Computational Sequence Design  
Techniques for DNA Microarrays**

**By:**

**Dr. Dan Tulpan, Research Officer,  
NRC-IIT & FCS Honorary Research  
Assistant**

The design of DNA microarray probes is a key step in the manufacturing process of modern microarray chips - biotechnology tools that allow the parallel qualification and quantification of large numbers of genes. The challenge here resides in how to select (computationally) large sets of unique probes that distinguish among specific sequences from complex samples consisting of thousands of closely similar targets. The daunting task of designing such large sets of probes is hampered by the computational costs associated with probe efficacy evaluations.

In this talk I will introduce the probe design problem and survey various combinatorial and thermodynamic probe design criteria widely used by algorithmic approaches. If time permits, I will cover a case study that evaluates the quality of industry-grade probe sequences used by one of the largest worldwide microarray chip manufacturers.

**Wednesday, November 10st @ 3:30pm  
Information Technology Centre C-317**