

Biomedical Engineering



Seminar

Universal DNA Arrays

By

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United Technologies Building, Room 150

4:00-5:00 pm

Abstract:

High throughput genomic technologies have revolutionized biomedical sciences, and progress in this area continues at an accelerated pace in response to the increasingly varied needs of biomedical research. A promising emerging technology is the use of universal DNA tag arrays. A universal DNA tag array consists of a set of DNA strings called tags, designed such that each tag hybridizes strongly to its antitag (Watson-Crick complement), but does not hybridize to any other antitag.

Sample analysis is done by a sequence of hybridization and single-base extension reactions involving reporter probes consisting of application specific primers ligated to antitags. This architecture provides unprecedented assay customization flexibility while maintaining a high degree of multiplexing and low unit cost.

In this talk I will give an introduction to the universal array technology and present algorithms for two challenging combinatorial optimization problems arising in the design of genomic assays based on universal DNA tag arrays.

