CIBM SEMINAR SERIES

Computation and **I**nformatics in **B**iology and **M**edicine
Training Program

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Creating a Lexicon of Nucleotide Code Words

Abstract:

Coding information in short strings of nucleotide bases is central to current research involving DNA and RNA molecules with particular functional properties. We discuss our ability to engineer nucleotide "code words" with specified characteristics, as it pertains to questions of DNA surface biochemistry and DNA computing in particular. Known results from coding theory and combinatorics on words have provided the basis for recent advancements in oligonucleotide design. However, since the mathematics does not sufficiently address the underlying biology of this problem, additional research is clearly needed. After providing a brief survey of DNA computation as a motivational context for this problem, we compare the accomplishments and deficiencies of the two major solution approaches and outline the challenges which must be overcome in improving on them.

Tuesday, April 15th
4:00 p.m.

Room 1221
Computer Sciences / Statistics Building
1210 West Dayton Street