Improving the Layout of Oligonucleotide Microarrays: Pivot Partitioning

Sérgio A. de Carvalho Jr.[1,2,3]   Sven Rahmann[1,2]

[1]Algorithms and Statistics for Systems Biology, Genome Informatics,
Technische Fakultät, Universität Bielefeld, Germany

[2]International NRW Graduate School in Bioinformatics and Genome Research

[3]Graduiertenkolleg Bioinformatik

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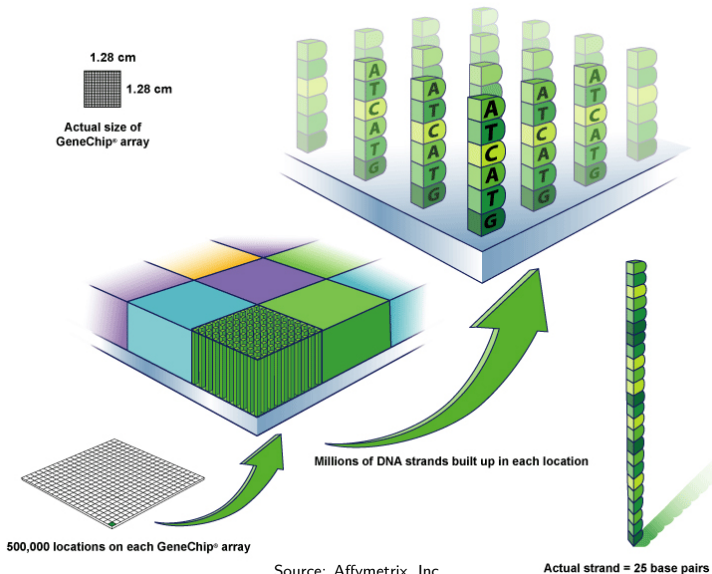Zürich, Sep 2006

Outline

1. Introduction: Microarray Layout

2. Conflict Index Evaluation Model

3. Pivot Partitioning Algorithm

Outline

High-Density Oligonucleotide Microarrays

Source: Affymetrix, Inc.

Probe Synthesis: Photolitographic Masks

Source: Affymetrix, Inc.
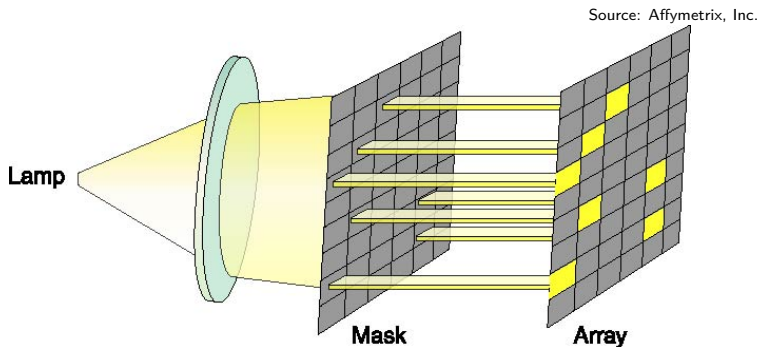
- Probes are synthesized on the chip in a series of steps
- Each step appends a particular nucleotide to selected regions
- Selection occurs by exposure to light

Deposition Sequence and Probe Embeddings

Show animation with masks

Problem: Unintended Illumination

Border Length Minimization Problem

Outline

Motivation

Outline

Previous work

Summary

Thanks!

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Thank you for your attention!