

# PHYLOCHIP TECHNOLOGY

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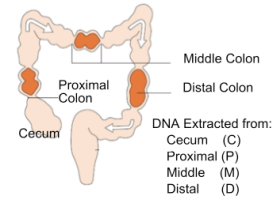
SISMID14-Lect 3



## An example:

Bacterial Species in the Gut: Example of a Metagenome. Samples from IBS and healthy rats give abundance of about 1,000 species of bacteria.

Analyze species abundances collected using the LNBL Phylochip in a study of Irritable Bowel Syndrome (IBS) in rats. We compare microbiological communities in healthy and IBS rats sampled at different locations in the intestine



Papers where this is detailed: [4], [3].

## PhyloChip Microarray Technology

The technology was developed by LBL. The entire array of 506,944 features was arranged as a square grid of 712 rows and columns. Of these features, 297,851 were oligonucleotide 16S rRNA gene PM or MM probes. The remaining were used for image orientation, normalization controls, or other unrelated analyses. The 297,851 probes were combined to yield 8,634 scores that represent the abundances of 8,634 taxa, species or phylotypes.



Probes: 16S rRNA sequences for known species.

## PhyloChip Microarray Technology

Agilent-type technology chips: PM-MM comparison of positive matches and mismatched oligomers. Normalization and scaling of the data. We used 'Variance Stabilizing Transformations' for the microarray data, (asymptotically equivalent to the log but on the medium scale not the same).

