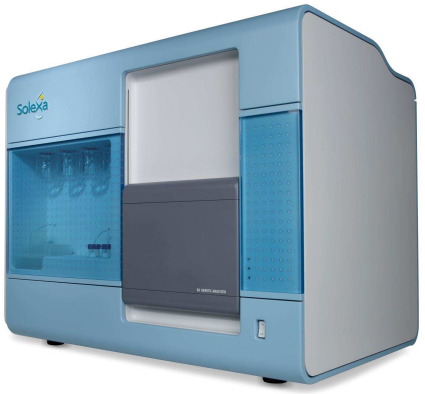
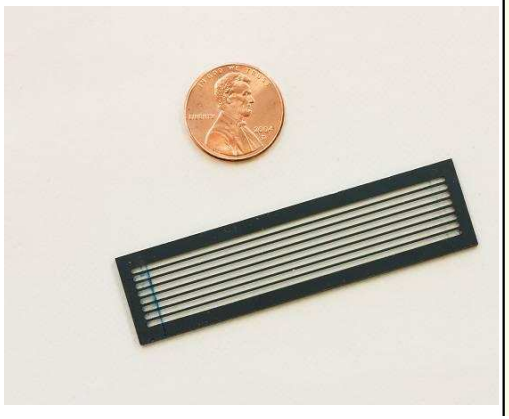
Illumina Genome Analyzer



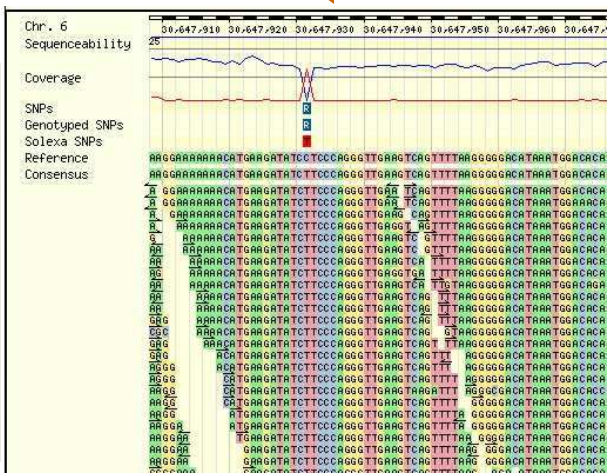
2a – DNA colonies Generation

3 – Sequencing & Imaging

1 - Sample Preparation

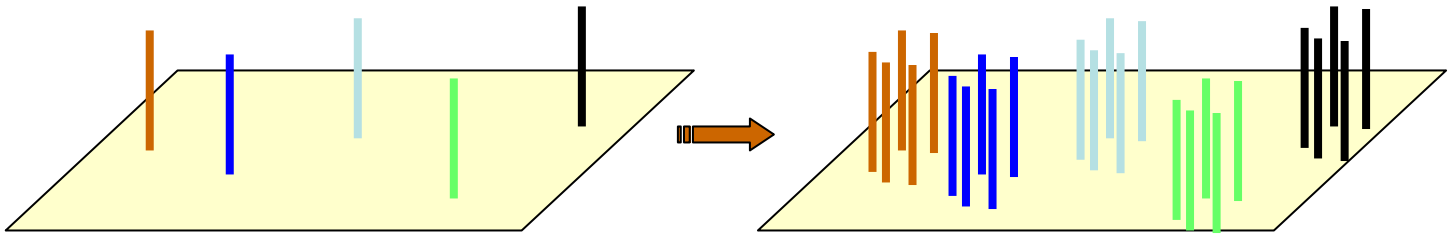


2b – Flow Cell



4 – Data Analysis

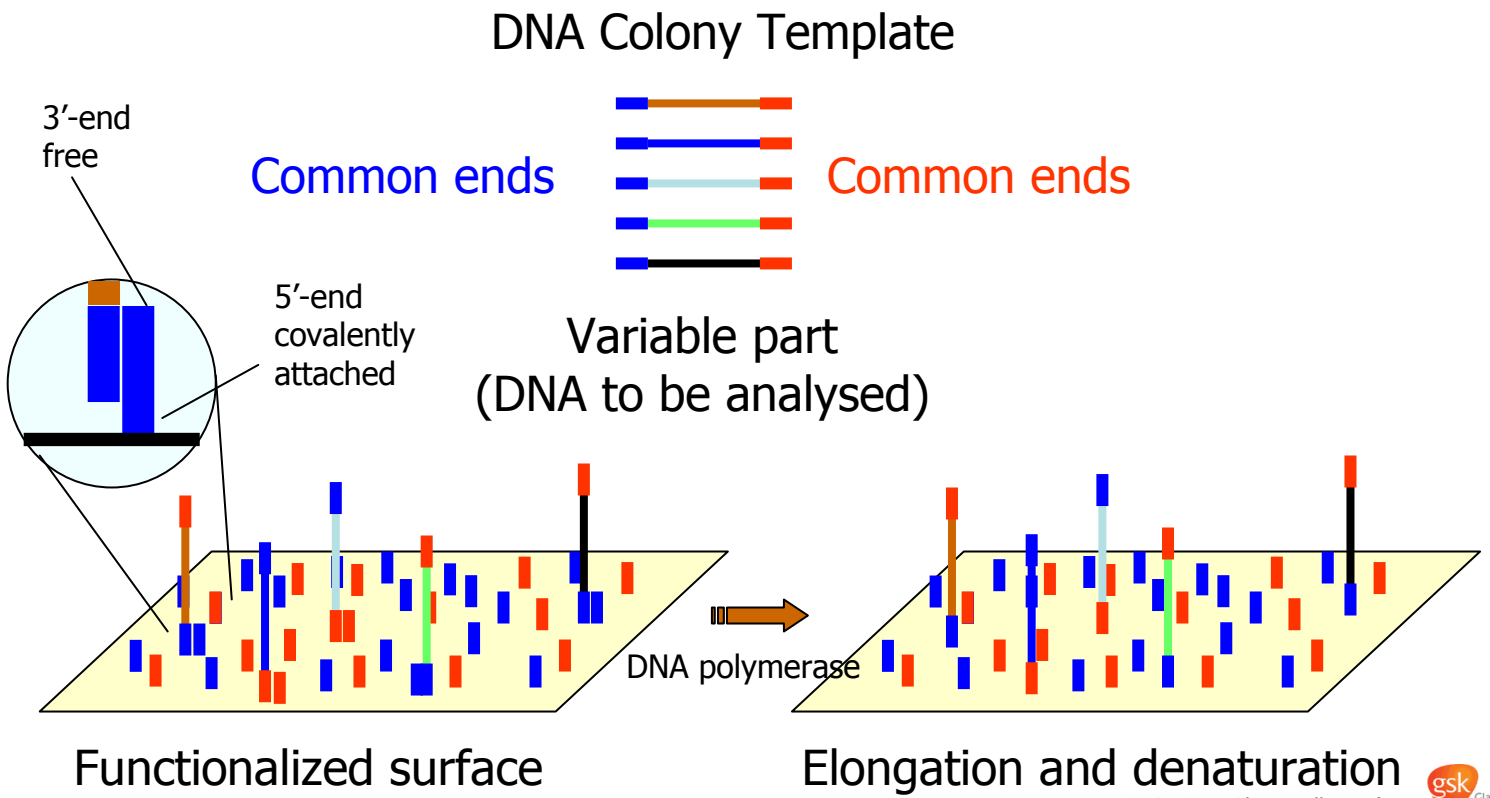
DNA Colonies: in situ Amplification



In situ amplification

1996-1997: GlaxoWellcome's Geneva Biomedical Research Institute
1998-2000: Serono
2000-2003: Manteia Predictive Medicine
2004- : Solexa, illumina

DNA Colonies: Random Arraying



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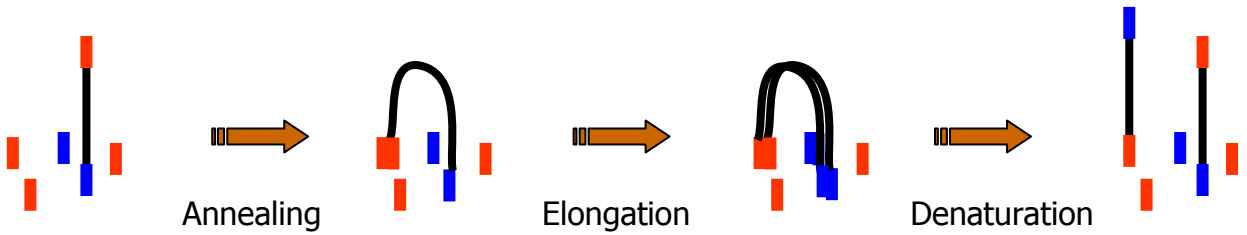
Generation of DNA Colonies



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DNA colonies

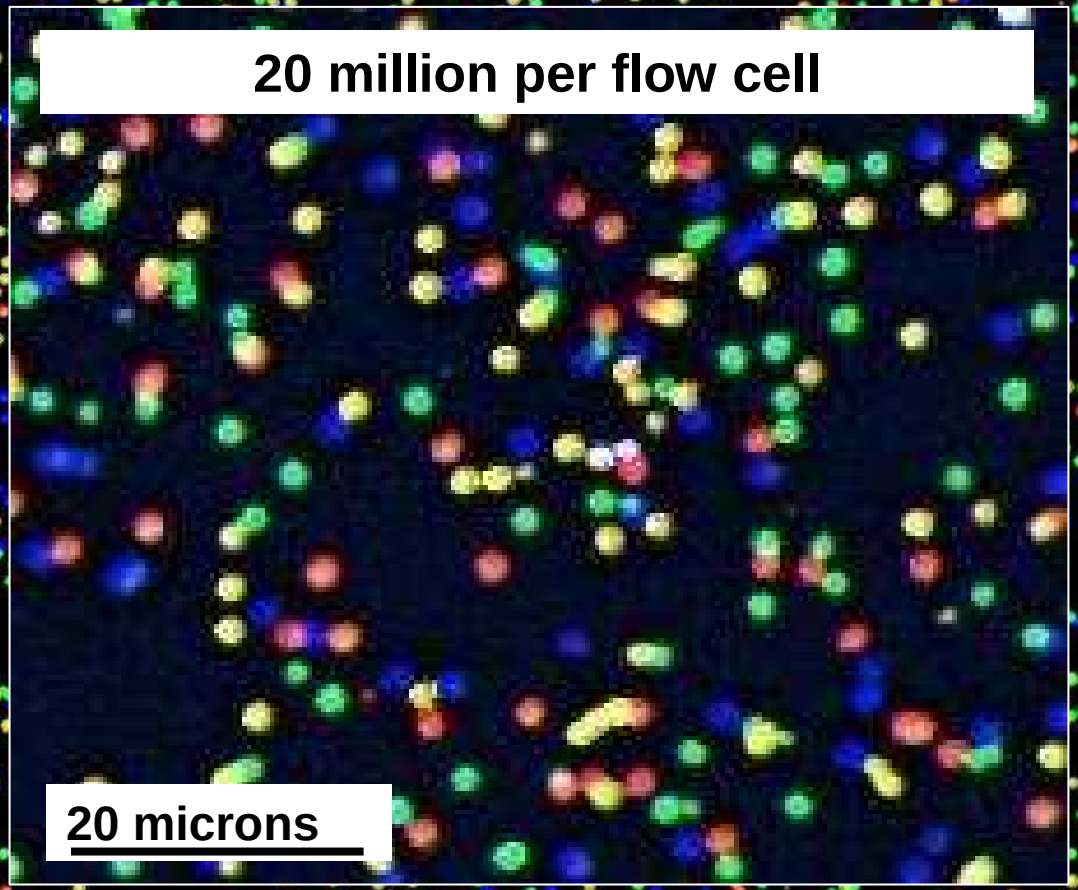
1996-1997: GlaxoWellcome's Geneva Biomedical Research Institute

1998-2000: Serono

2000-2003: Manteia Predictive Medicine

2004-2006 : Solexa

2007-: Illumina

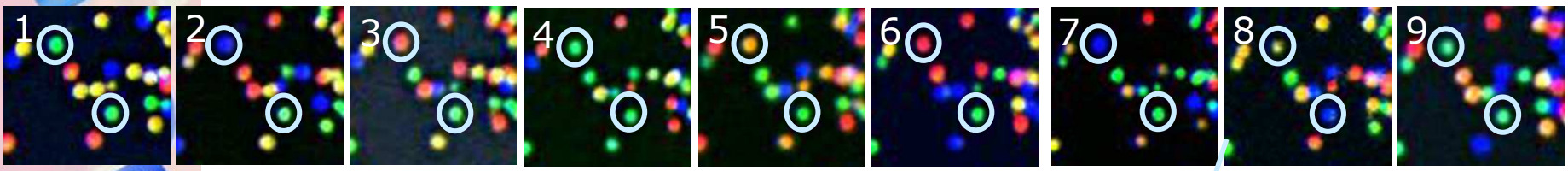


100 microns

Solexa sequencing

Using reverse terminator technology

T G C T A C G A T …

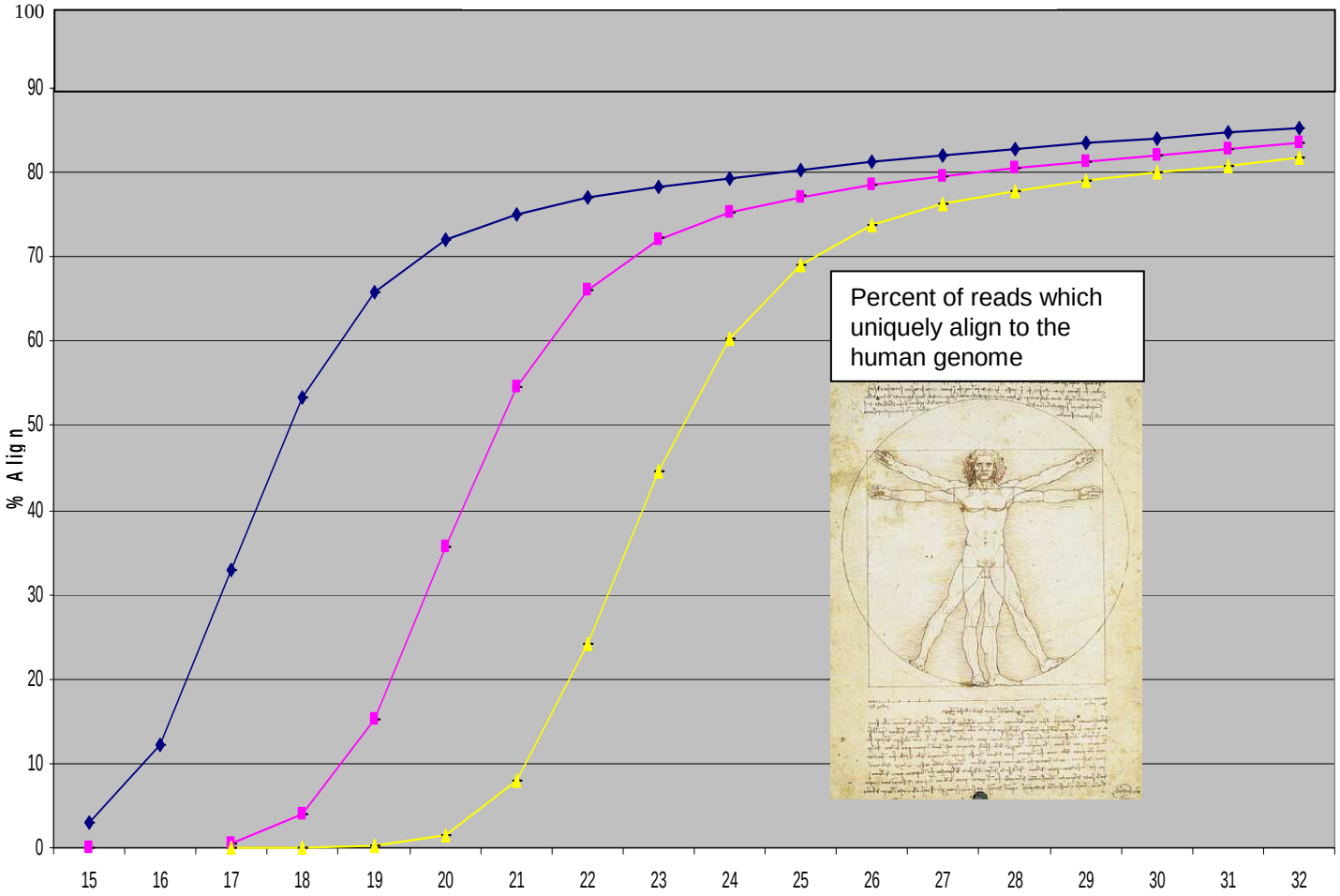


T T T T T T T G T …

The identity of each base of a DNA colony is read off from sequential images

The labelled nucleotides are blocked on the 3'-ends.
A cycle starts by polymerase extension of a single base. After image acquisition, the label is removed and the 3' ends are de-blocked, so that the next cycle can start.

Sequence-ability: human Genome



Source: illumina