

# Infinium Custom Genotyping: Leading the Way in Genomic Research

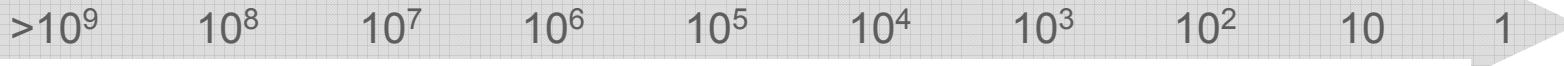
Diane Lince  
Product Manager  
Illumina DNA Analysis Products

# Addressing Breadth of Customer Needs

Discovery

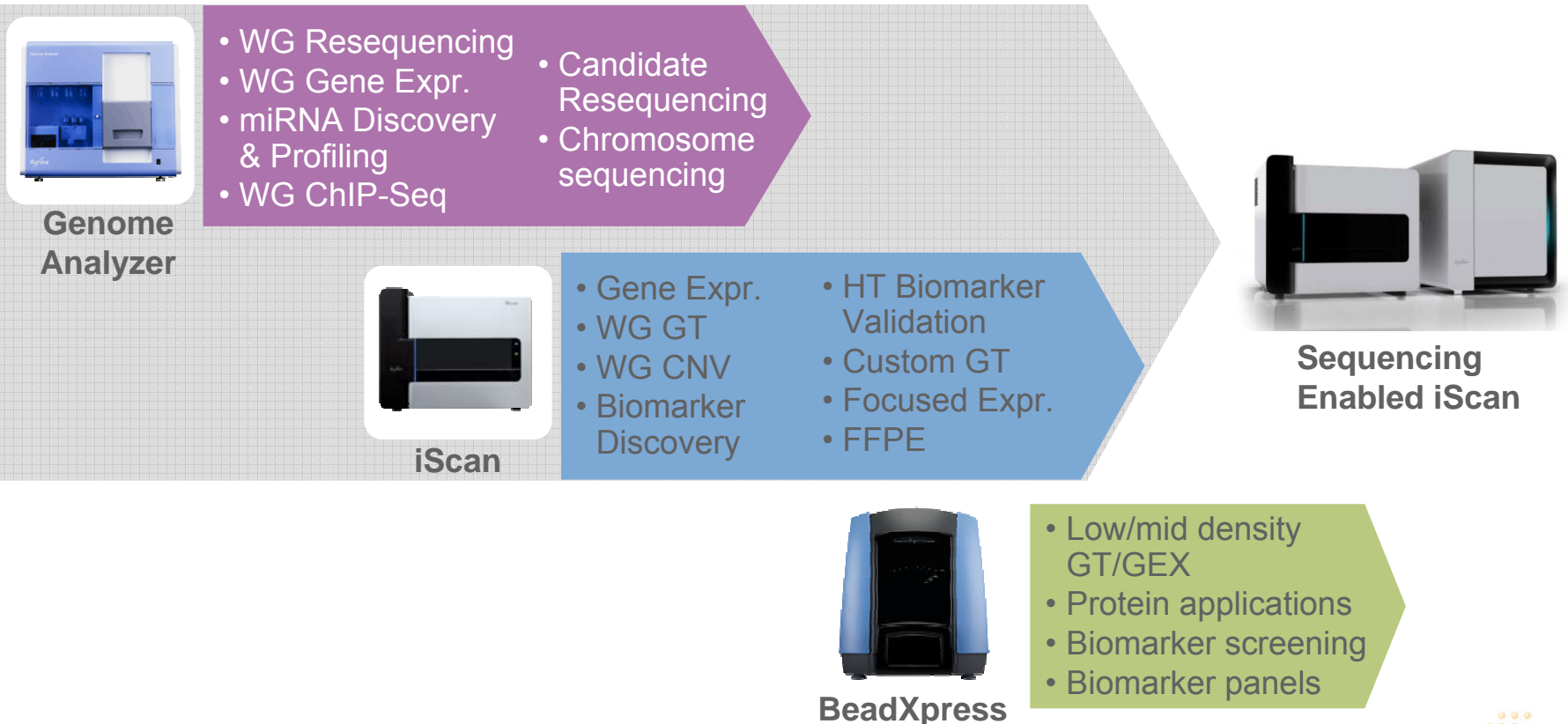
Focused Research/Validation

Screening

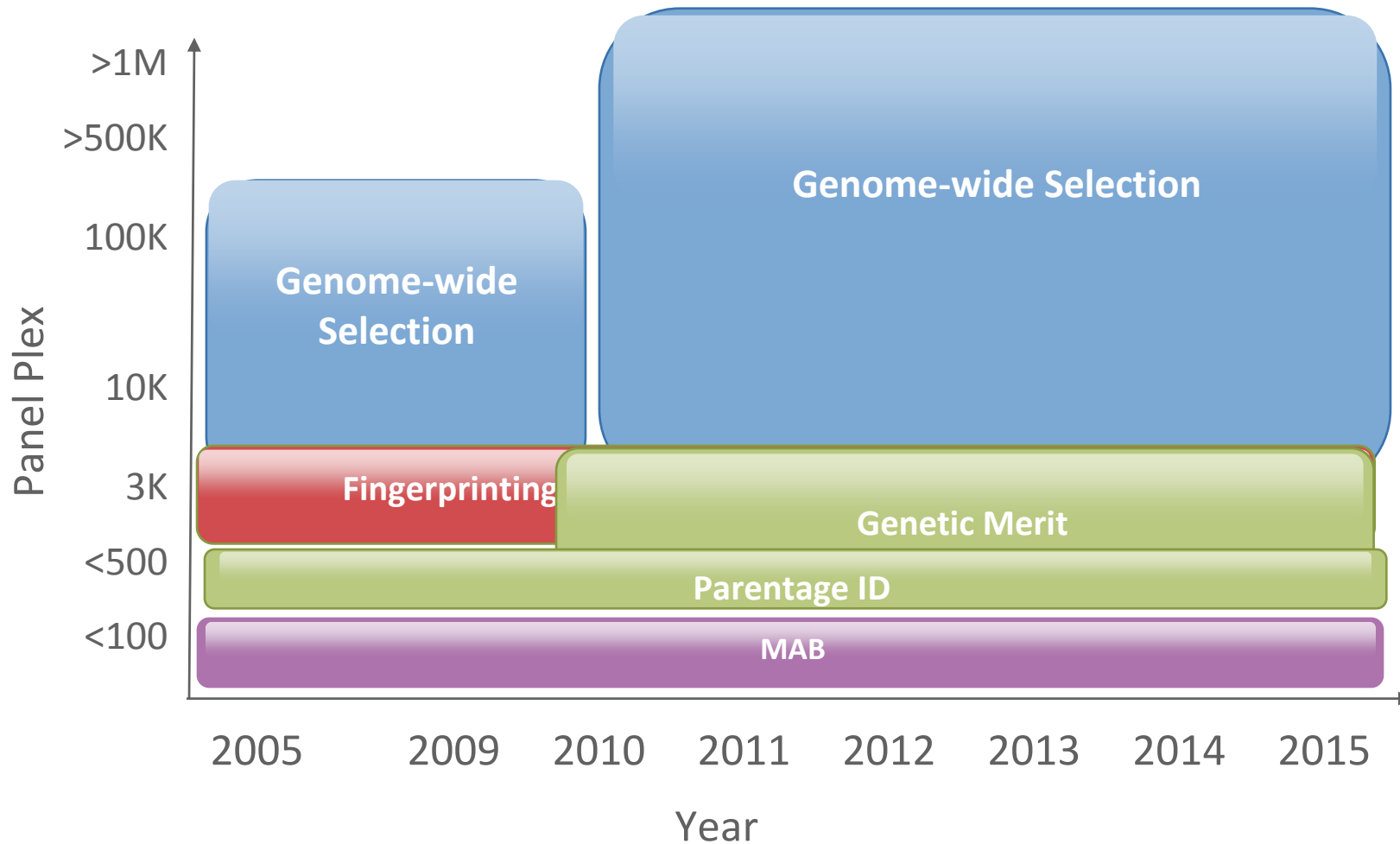


Whole Genome

Single Marker



# Agrigenomics Applications



# ARRAYS

*Targeted  
resequencing*

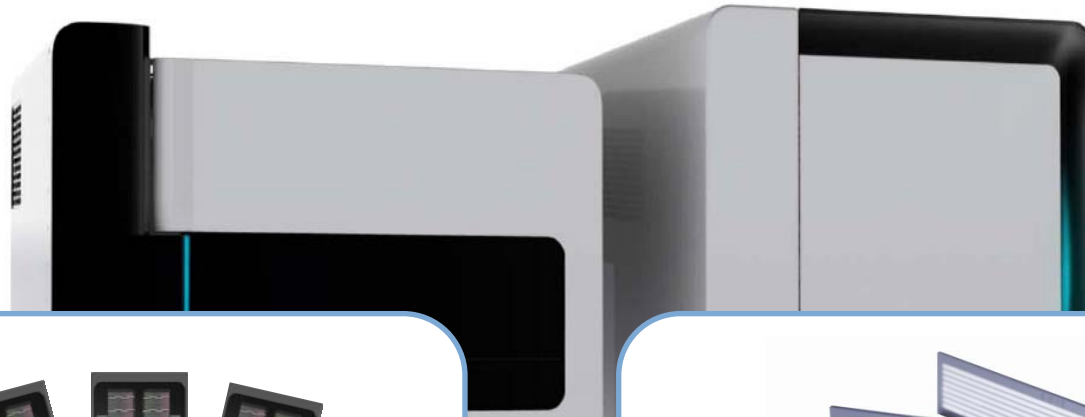
**Next-Gen Sequencing**  
Identifying Variants

**High Density Arrays**  
Deploying Variants

**Content Development is Accelerating**

**High Density Custom Arrays**  
Confirming Variants

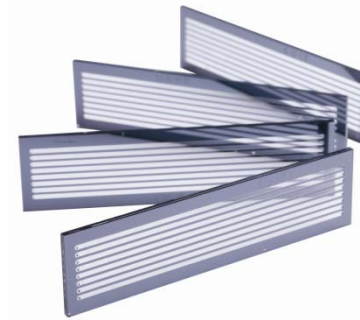
# iScan with Sequencing Module



## iScan

- Scans HD BeadChips
- Multi-sample formats
- Infinium & Golden Gate assays
- Up to 4800 samples a day
- Seamless automation integration
- Available since April 2008

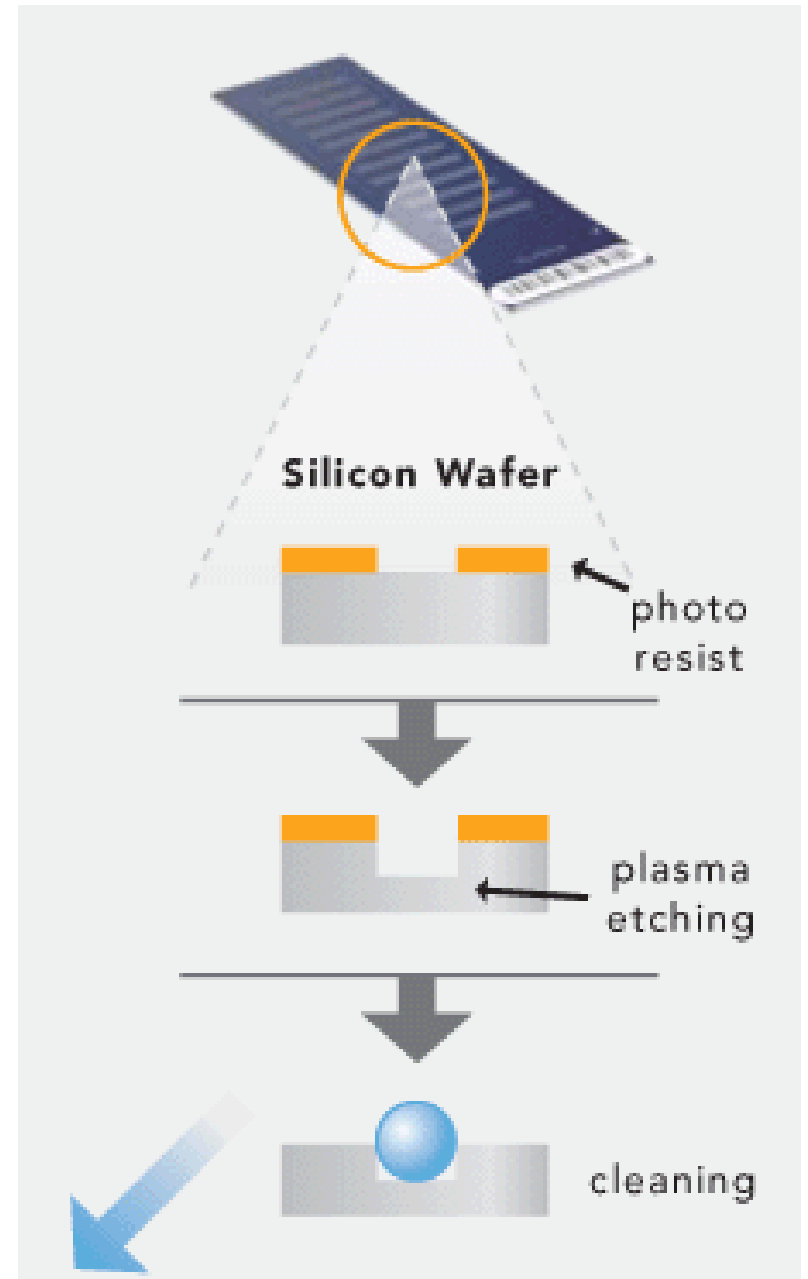
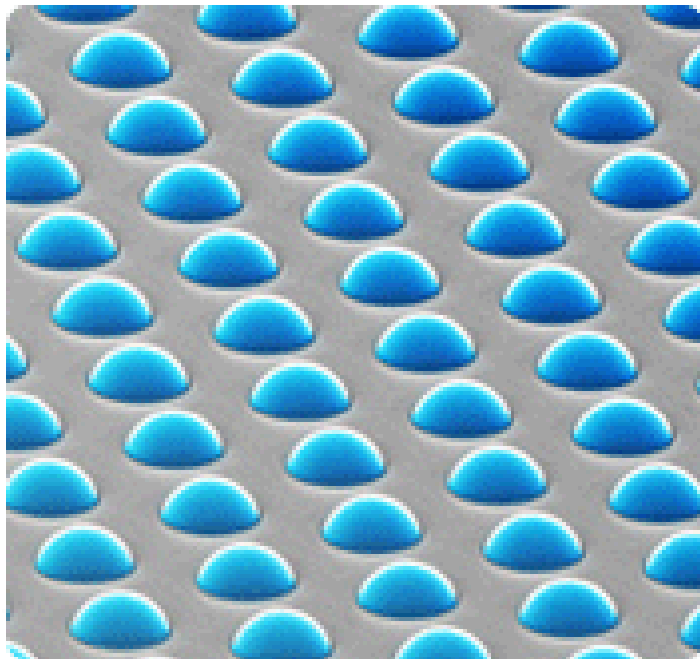
+



## iScan Sequencing Module

- Scans flow cells
- Uses SBS reagents
- ~ 10% GAIIx output
- Paired end capability
- Up to 2 x 50bp
- > 32 M clusters per run

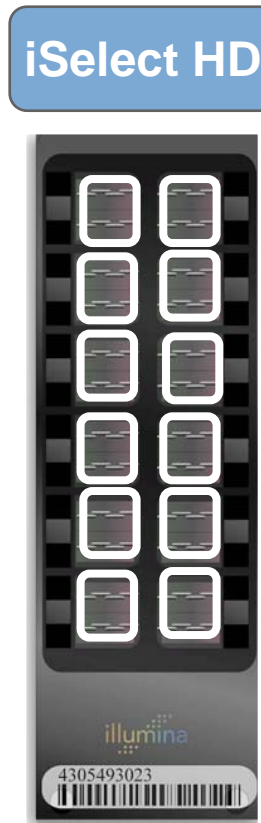
# Illumina's BeadArray Technology



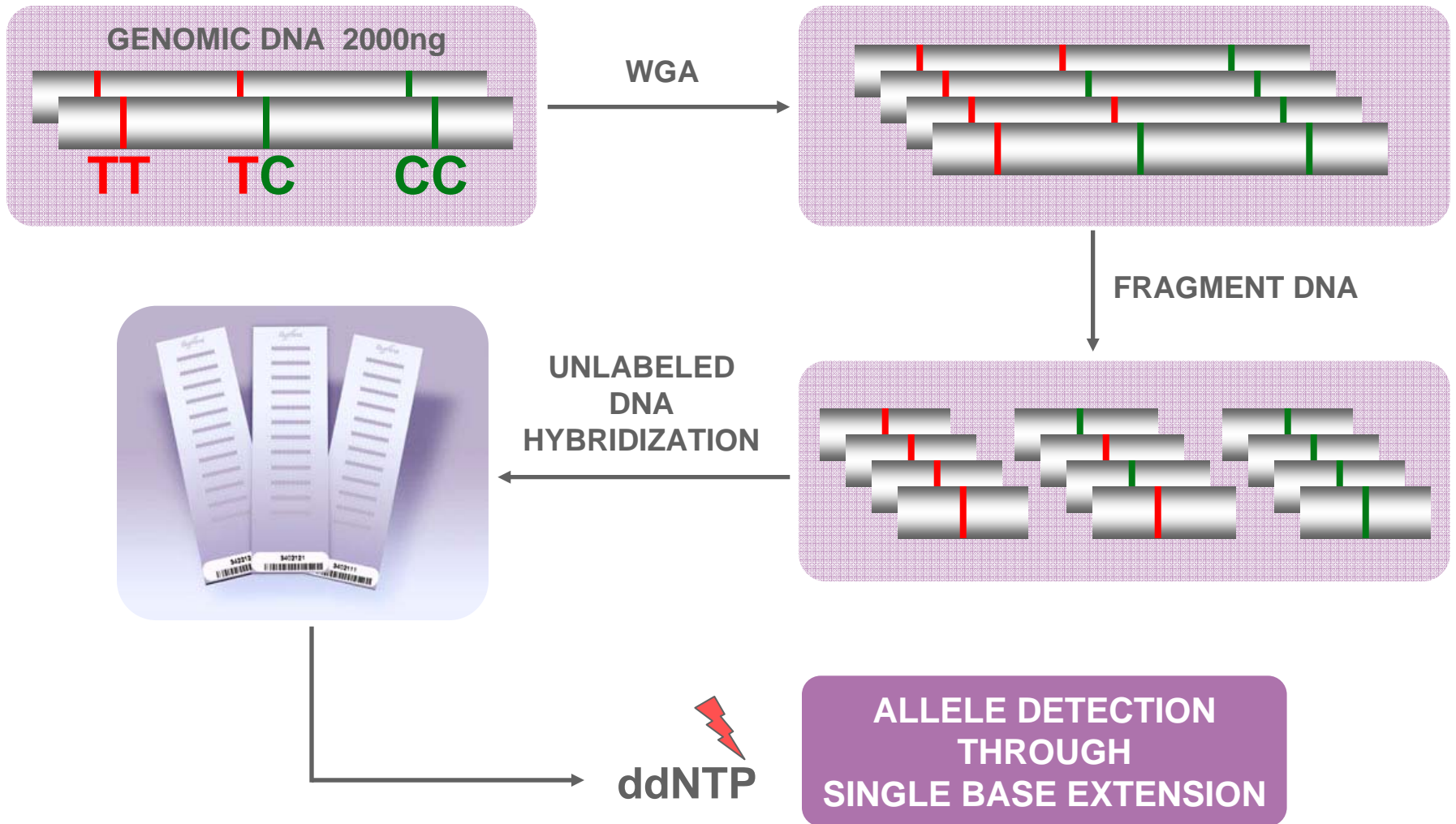
# Infinium iSelect® HD Custom Genotyping

3,000 ← 6,000 — 60,800 — 200,000

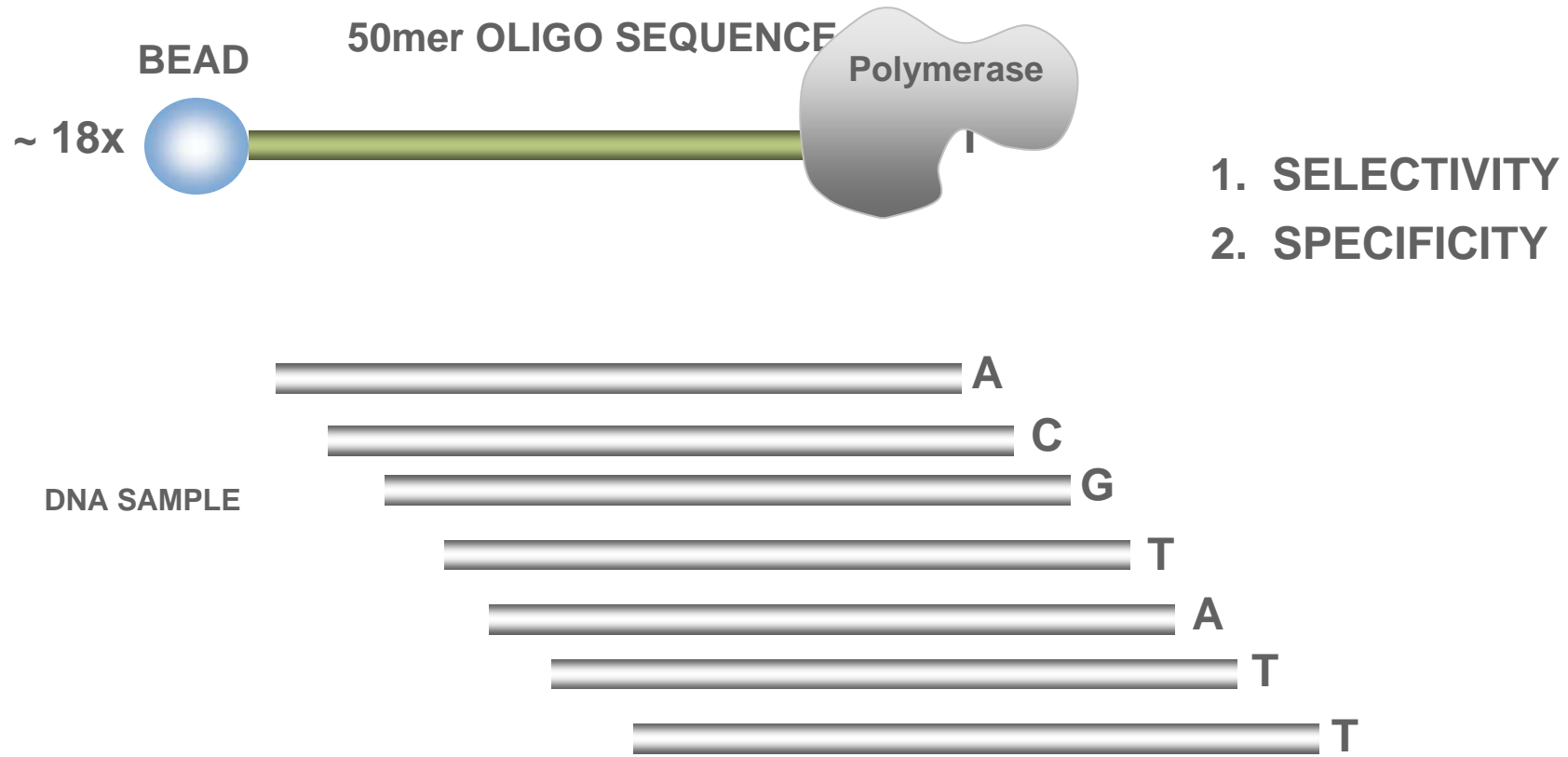
- Target any variant, any species
- Low DNA input (200ng)
- >80% Beadtype success rate
- 12-samples per chip



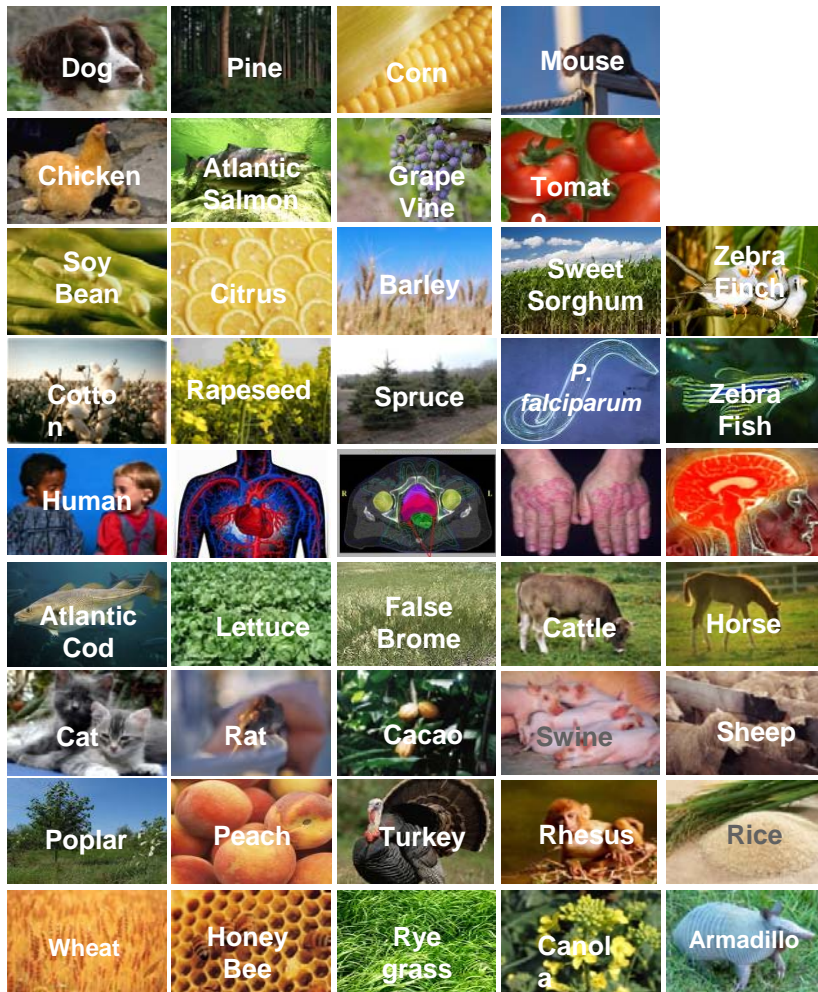
# From 3K to 1M SNPs – One Assay - Infinium



# Allele Detection Through Single-Base Extension



# Custom Genotyping on the Infinium Assay



## Applications

- Genome-wide selection
- Genetic Prediction
- SNP discovery
- Commercial Agriculture screening panels

The Right Content Lets you Capture More Biology

# Expanding the Market with Focused Content

*Leveraging the 12 Sample iSelect Platform to Deliver Innovative Content*



- **BovineSNP50**

- Developed in collaboration with USDA – Beltsville, University of Missouri, and University of Alberta

- **CanineSNP20 → CanineHD coming in Q4 2009!**

- 22,000 validated SNP probes derived from the CamFam2.0 assembly

- **EquineSNP50**

- Developed in collaboration with: International Equine Genome Mapping Workshop and the Morris Animal Foundation's Equine Genome Consortium

- **PorcineSNP60**

- Developed in collaboration with Int'l Porcine SNP Consortium (Martien Groenen: Wageningen Univ)

- **OvineSNP50**

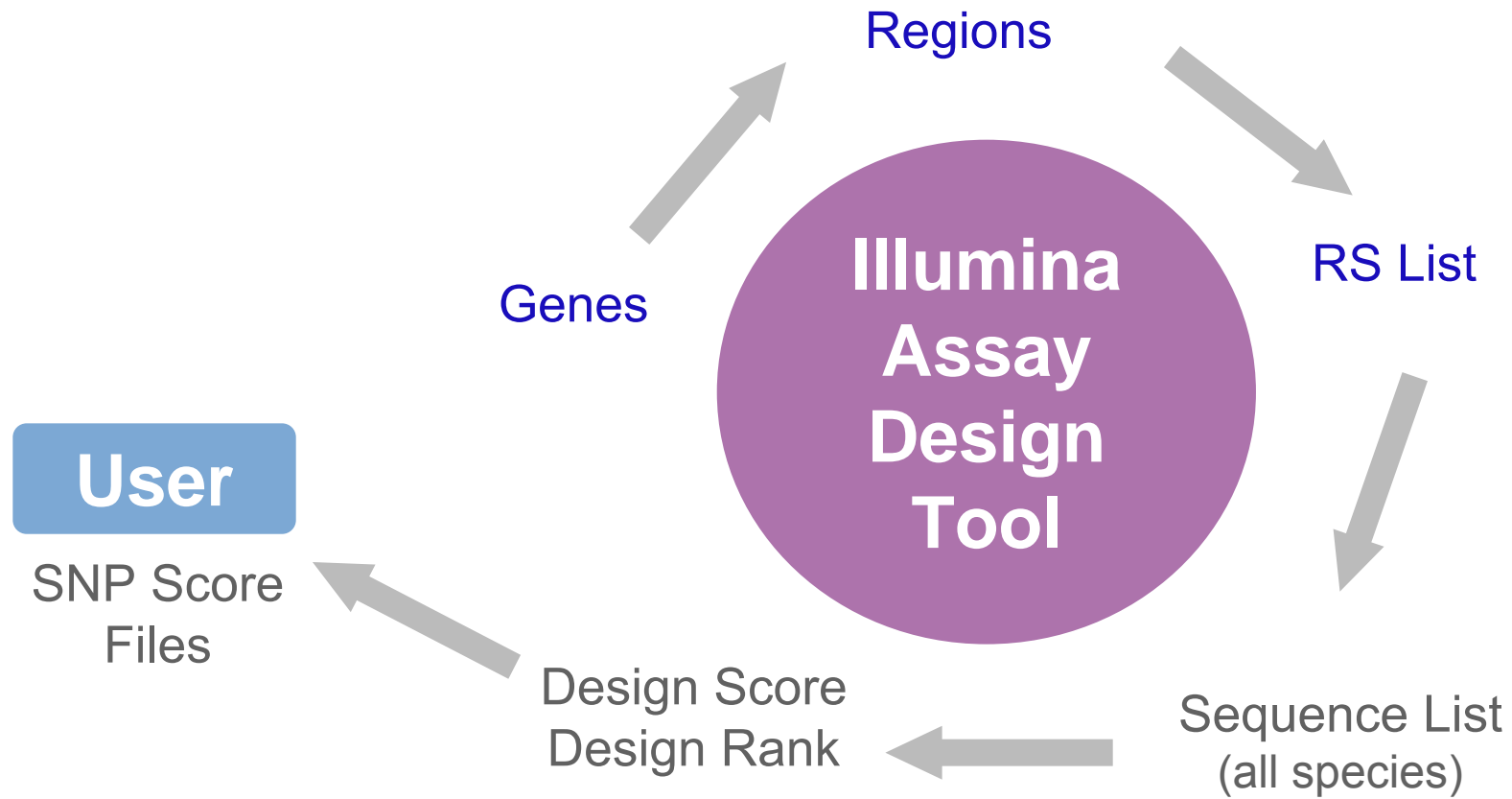
- Developed in collaboration with the International Sheep Genomics Consortium (ISGC)

- **MaizeHD – coming in Q4 2009!**

- And many more.....



# ADT: Preliminary Design Process



MAF=Minimum Allele Frequency

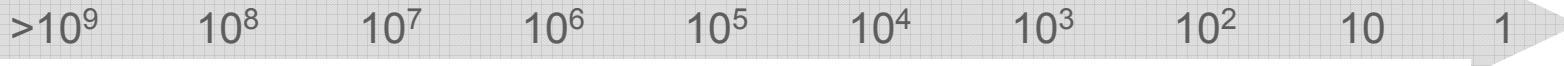
The expected **beadtype success rate** is  $\geq 80\%$  of the original SNP list delivered. Illumina guarantees a minimum 80% will be delivered as decodable content.

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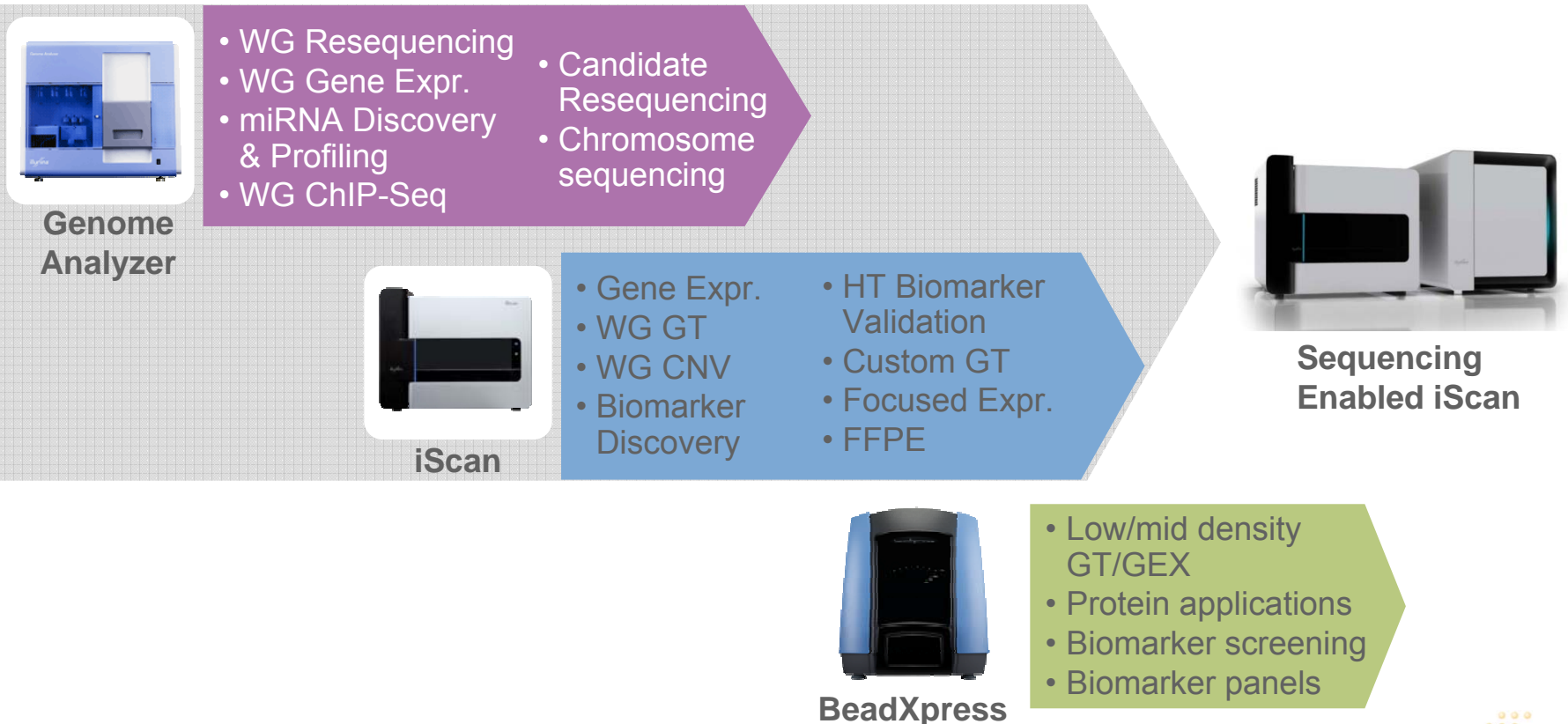
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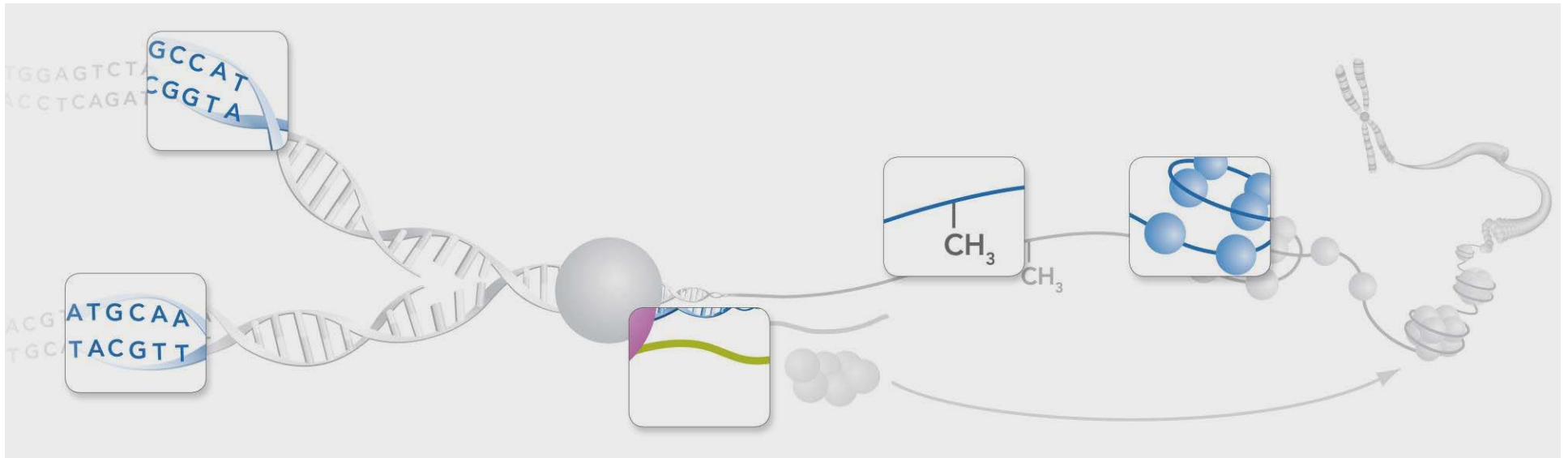


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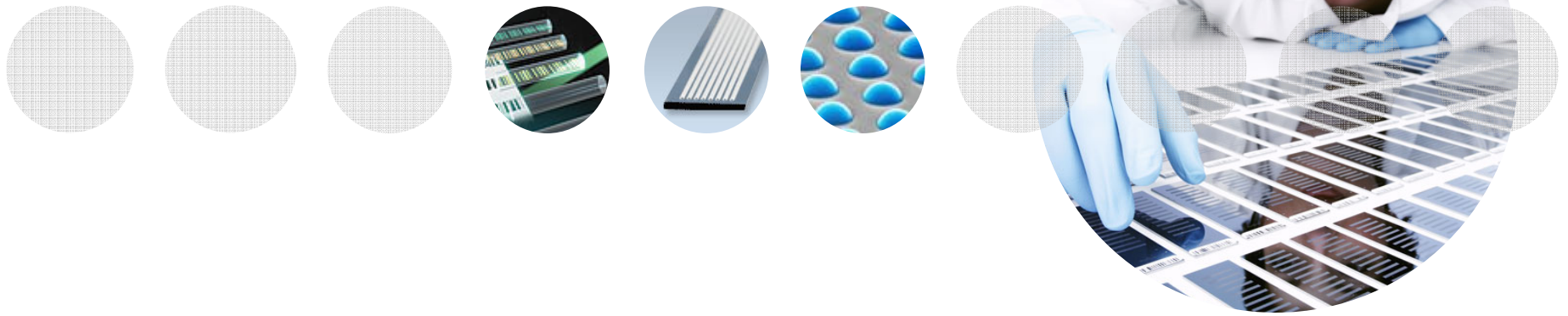
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# Go where the biology takes you



## Thank You



Presenters title and name