



The Way Ahead.™

# Welcome and Meeting Overview

*Zandra Carrington*

*Marketing Manager Functional Genomics*

1st European ChIP-on-chip Scientific Forum



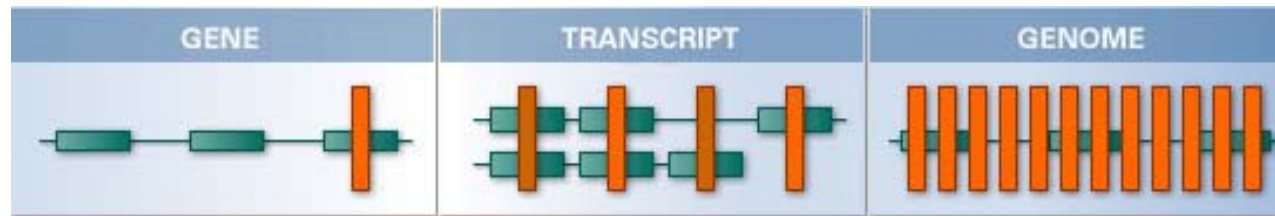
# First words...

- Thank you for being here!
- Thank you to our sponsors
  - Genpathway
  - Genomatix
  - Partek
  - Abcam
- Introduction to the team

1st European ChIP-on-chip Scientific Forum

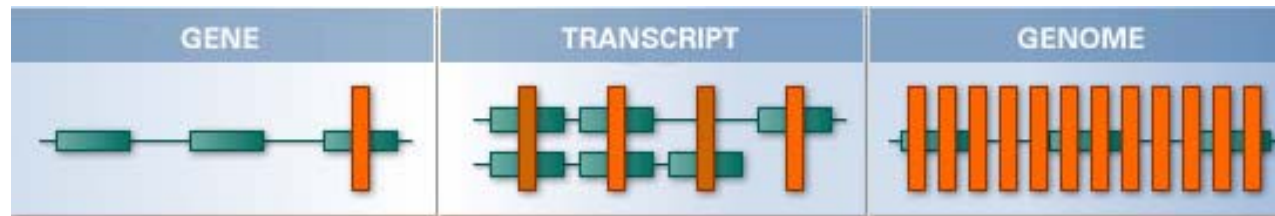


# Why are we here?



- Arrays offer unparalleled promise of understanding genome wide activity
  - Expression already “tamed”
  - Now focus on next layer of biological understanding – regulation, transcription activity, replication etc.
  - Transfer of novel applications such as ChIP-on-chip onto arrays
  - Can be much more ambitious in novel approaches
  - Growing number of publications showing necessity to look at whole genome for regulation / epigenetic activity

# Why are we here?



- Affymetrix have one very unique benefit for whole genome analysis: **CONTENT**
  - Unique photolithographic manufacturing process allows up to 6.4 million features per array
  - **FOCUS** on **WHOLE GENOME**
  - Find the tools to enable you to move away from very limited, biased approaches to whole genome analysis
  - By far the most biologically informative approach!

# What are the current tools?

## ■ Whole Genome Tiling arrays

- Human (7 array set) – 35 bp resolution
- Mouse (7 array set) – 35 bp resolution
- Drosophila (1 array) – 35 bp resolution
- Arabidopsis (1 array) – 35 bp resolution
- *S. cerevisiae* (1 array) – 5 bp resolution
- *S pombe* (1 array) – 20 bp resolution
- *C. elegans* (1 array) – 25 bp resolution

Mouse Tiling 2.0R Array A (chromosomes 1, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, X, Y and mitochondria)

Mouse Tiling 2.0R Array B (chromosomes 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, X, Y and mitochondria)

Mouse Tiling 2.0R Array C (chromosomes 3, 7, 18)

Mouse Tiling 2.0R Array D (chromosomes 4, 11, 17)

Mouse Tiling 2.0R Array E (chromosomes 2, 12, 15)

Mouse Tiling 2.0R Array F (chromosomes 6, 8, 16)

Mouse Tiling 2.0R Array G (Chromosomes 10, 13, 14)

Human Tiling 2.0R Array A (chromosomes 1, 6)

Human Tiling 2.0R Array B (chromosomes 2, 9, 19)

Human Tiling 2.0R Array C (chromosomes 23, 22, 21, X, Y and mitochondria)

Human Tiling 2.0R Array D (chromosomes 4, 5, 18, 20)

Human Tiling 2.0R Array E (chromosomes 5, 7, 16)

Human Tiling 2.0R Array F (chromosomes 8, 11, 12)

Human Tiling 2.0R Array G (Chromosomes 10, 13, 14, 17)

**Assay optimisation on single array, scale up to whole genome set!**

# Custom and Focussed Arrays

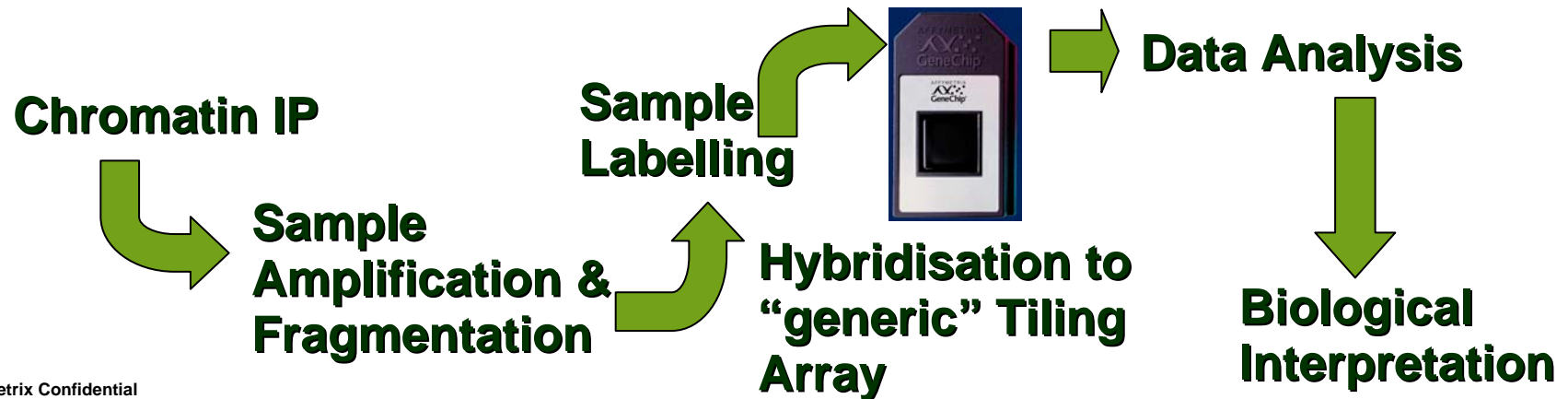
- Focussed Arrays
  - Human and Mouse Promoter Arrays (10kb / promoter) (1 array) – 35 bp resolution
  - Human ENCODE Array (1 array) – 7 bp resolution
  - Human Chromosome 21/22 Array (1 array) – 16 bp resolution
- For novel genomes, specific genomic regions, multiple applications, same array etc
  - Custom approach
  - Accommodate anything from 380,000 – 6.4 million features per array
  - Standard and “Advantage” Formats

# Where are we going?

- Continued focus on Whole Genome
- Increase content, decrease cost per sample
- Develop novel applications in-house and through collaborations
- Work with third parties to “fill the gaps”
- Work with you to help you overcome main technical hurdles

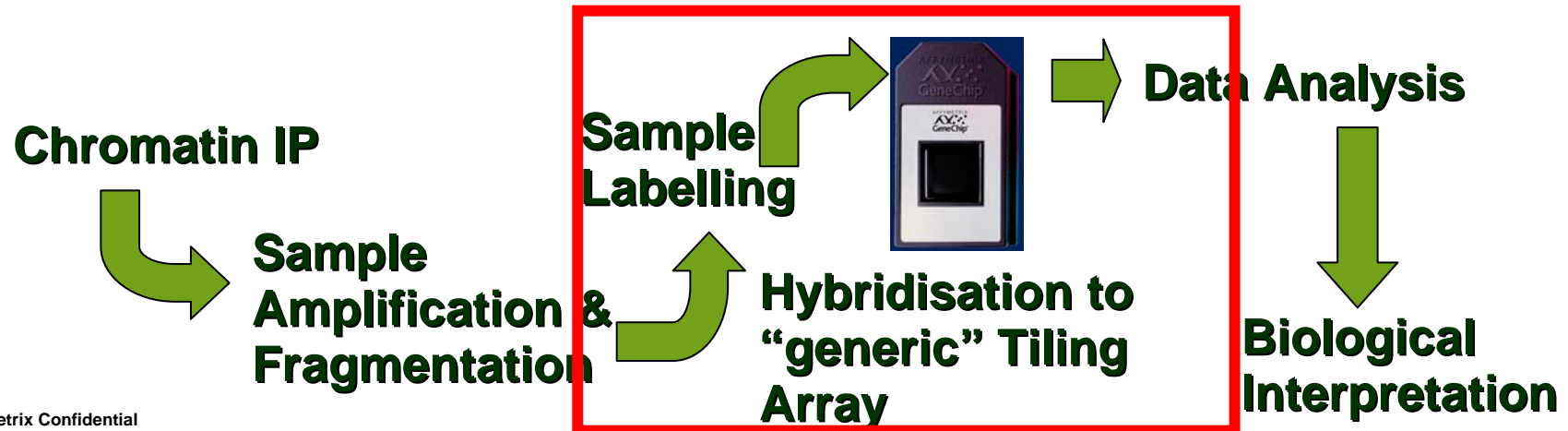
# The Challenges

- Arrays are only one small part of a complex workflow
- Technical challenges of experimental design
- Technical challenges of handling very large data sets
- Biological interpretation of data



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# Building an Affymetrix ChIP-on-chip Community

- Scientific Meetings and Workshops
- Webforum for technical discussion forums, exchange of protocols etc
- Support of hands-on ChIP courses
- Core Lab ChIP-on-chip Focus

# Meetings and Workshops

- US CHIP-on-chip Meeting Sept
- Smaller, regional workshops worldwide
- 2<sup>nd</sup> European CHIP-on-chip Meeting 2008?

# Webforum

- [www.chiponchip.net](http://www.chiponchip.net)
  - Affymetrix hosted webforum specifically for the CHIP-on-chip community
  - Allow you to participate in discussion threads on all aspects of workflow
  - Upload / download protocol info, hints / tips etc
  - Links to third party websites (eg antibody companies, software providers)
  - Update on worldwide CHIP-on-chip events, publications etc
  
  - LAUNCHES MARCH 30<sup>th</sup> 2007

# Support for hands-on ChIP-on-chip Courses

- EMBO Chromatin Immunoprecipitation Course
  - September 2<sup>nd</sup> – 8<sup>th</sup> Heidelberg
  - [http://www-db.embl.de/jss/EmblGroupsOrg/conf\\_62](http://www-db.embl.de/jss/EmblGroupsOrg/conf_62)
- Cold Spring Harbor Eukaryotic Expression Summer Course
  - July 18<sup>th</sup> – August 7<sup>th</sup> Cold Spring Harbor
  - <http://meetings.cshl.edu/courses/c-gnx07.shtml>

# Core Lab ChIP-on-chip Focus

- Approx 50 Core Labs in Europe signed up to Core Lab Programme
  - Many interested in offering ChIP-on-chip services
  - Possibility of setting up “Centres of Excellence” for consultation, QC metrics for sample acceptance etc
- = local expertise, local control on existing Affymetrix Platforms
- = access to expert centres for novice ChIP-on-chip groups

# What else do you need?

- It's your meeting!
  - Questions for discussion sections
  - Feedback on additional tools etc needed
  - Think Whole Genome!

Zandra\_Carrington@affymetrix.com