IMPC into the future

MRC Medical Research Council

NIH

Funding runs until July 2016 (production finished by end of 2015)

IMPC

International consortia currently putting together a business plan

Preparing an application for refunding to MRC Strategy Board

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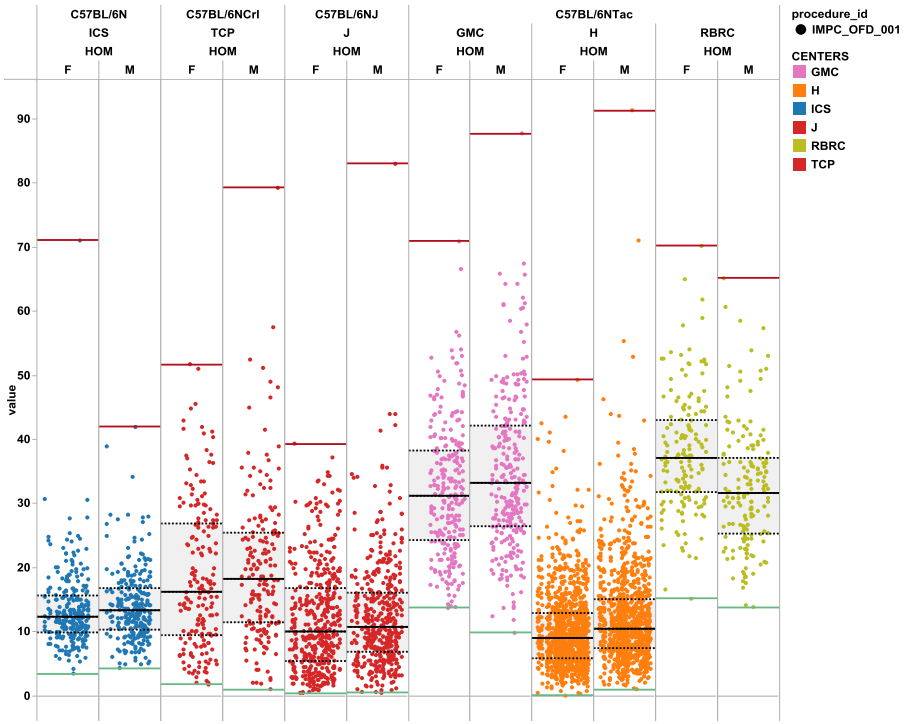
Future Proposals- phenotyping

Requirements for the future:

- Accurate data
- More Data
- Cost effective
- Includes Development

Refine and refresh:

- Analysis of 1700+
- Value-judgements
- New automated technologies
- Maintain and develop husbandry information



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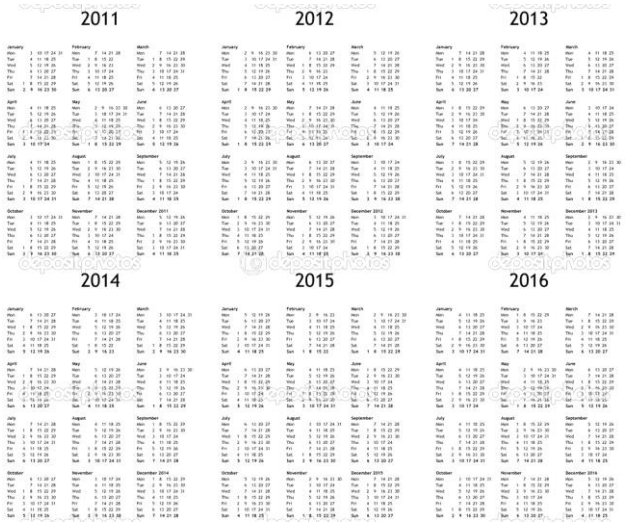
Changes to the Operating Model at Harwell



Original gene-list was a long-ranging

Although dynamic, delivery of lines could be anytime in years 1-4

FEEDBACK from MMN

Need more immediate delivery of lines and phenotyping data

Need to serve current interests

Need to increase the chances of delivery

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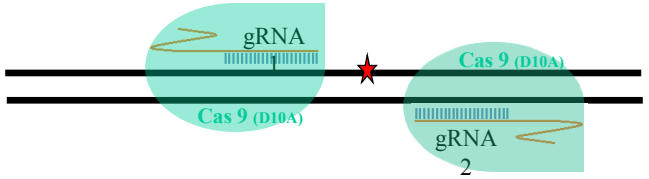
Genome Coverage

- ES cell repositories only cover 15,000 genes
- QC issues with a significant proportion of these
- GLT is only 50%
- Some gene refractory to classic targeting approaches

Requirements for the future:

- Quicker delivery
- Increased likelihood of delivery
- Be able to include genes which are not-targeted or ES-cell clones have not passed QC



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Future Proposals

100%
ES cell

ES cells from repository

CRISPR/Cas9
Embryonic injections
- Null alleles
- Complex alleles (in the future)

CRISPR/Cas9
ES cell manipulation
- Complex alleles

Progress to a mixture of technologies for delivering mouse models

We proposed to use CRISPR technology to make 50 of the lines left for this phase (null alleles).

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50 lines for Phase I

Role of MMN in gene nomination?

- Call throughout the existing networks to apply for these **null alleles** to be produced
- If over subscribed, genes prioritised by a transparent scoring method
- Criteria to include:
  - Genes where there is no known model
  - No ES cell clones (or of poor quality)
  - Imminent need for model or phenotyping data

Future of MMN and IMPC

50 CRISPR lines- A pilot for the future?

MRC Mouse Networks

- Increase the number of laboratories involved?
- Support for more consortia meetings?
- Provide a forum for discussion
- Communications network for calls for gene nomination
- A forum for developments in primary phenotyping
- Delivering secondary phenotyping to the DCC?

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