

# Genetics of extreme body size evolution in mice from Gough Island

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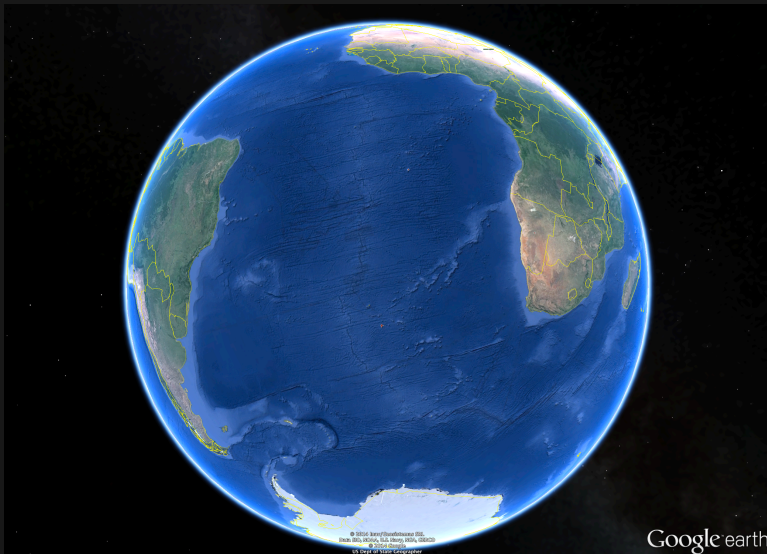
[biostat.wisc.edu/~kbroman](http://biostat.wisc.edu/~kbroman)

[github.com/kbroman](https://github.com/kbroman)

@kwbroman

[bit.ly/CTC2014](http://bit.ly/CTC2014)

# Gough Island



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# Big rodents



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# The Island Rule



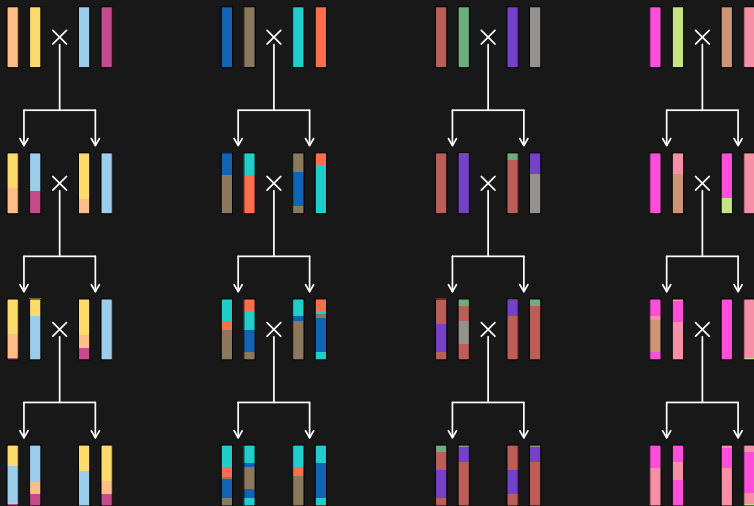
# Gough mice



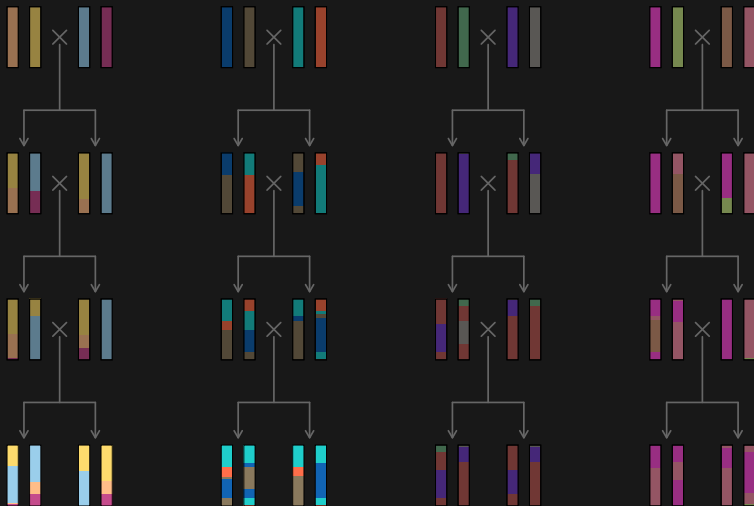
# WSB and Gough mice



# Partially-inbred Gough lines



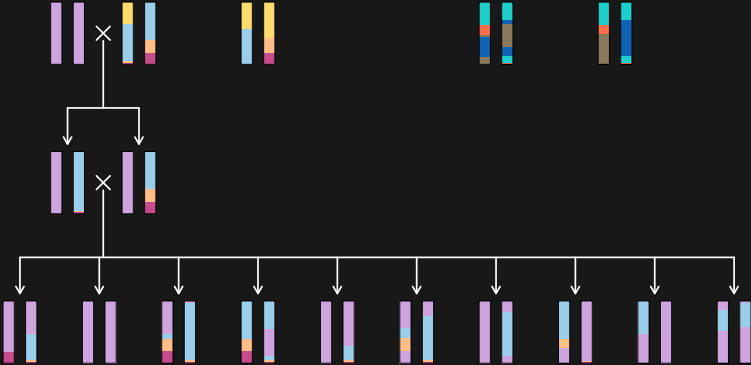
# Partially-inbred Gough lines



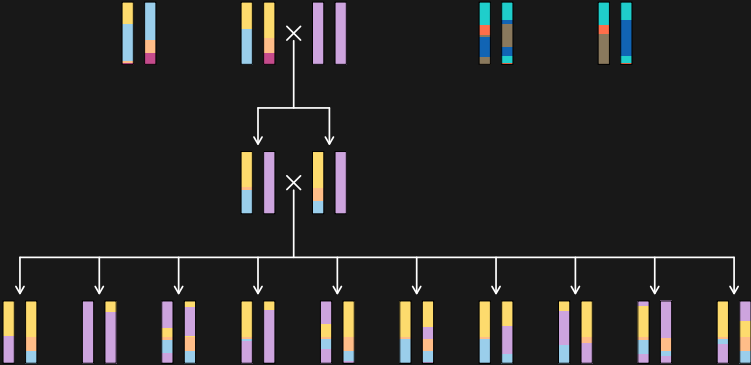
# Partially-inbred Gough lines



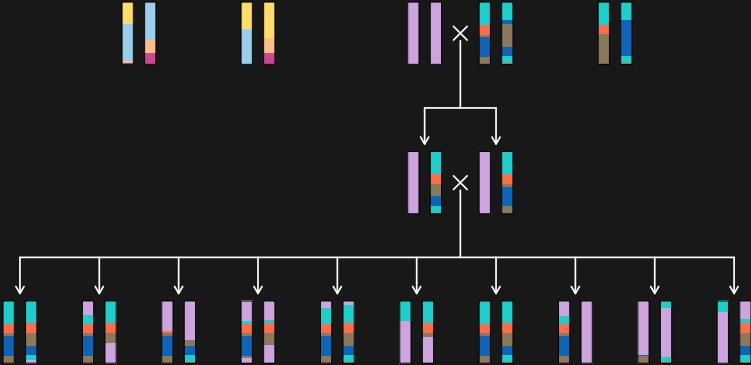
# Gough × WSB crosses



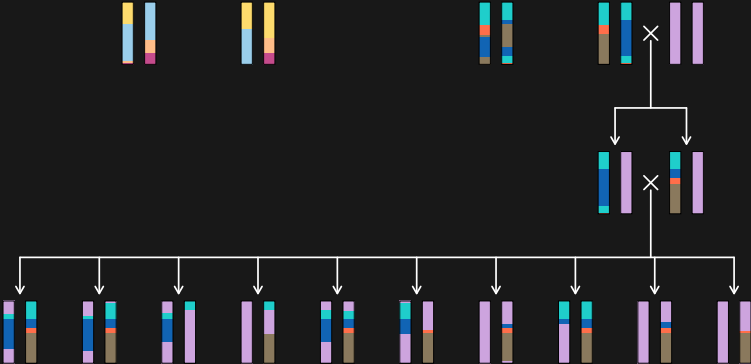
# Gough × WSB crosses



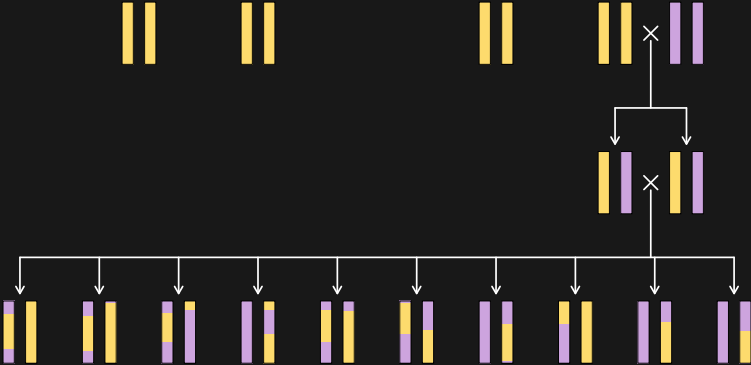
# Gough × WSB crosses



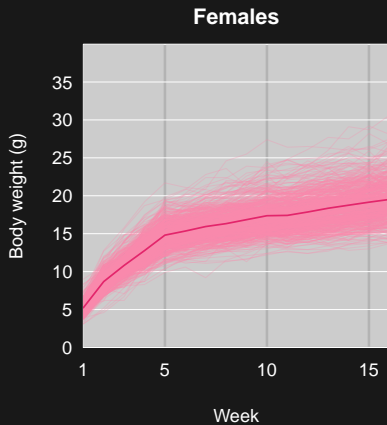
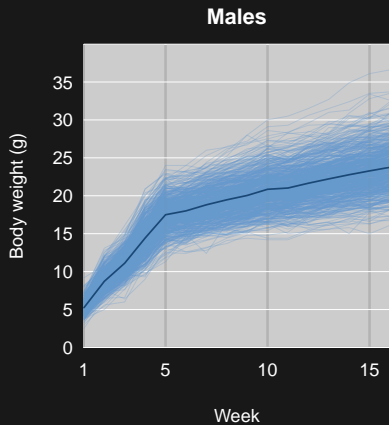
# Gough × WSB crosses



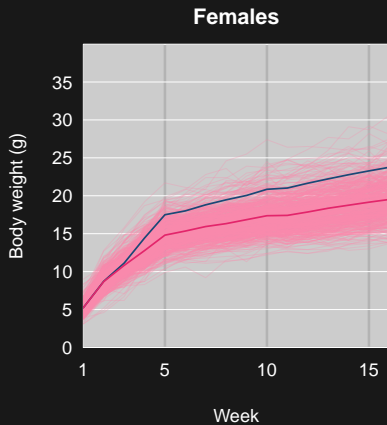
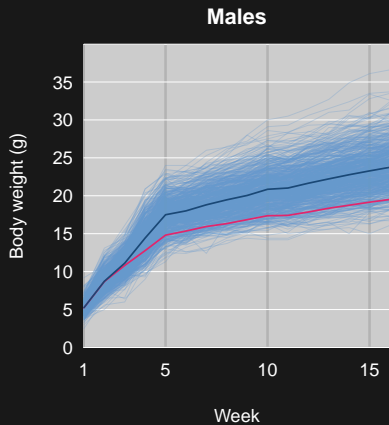
# Gough × WSB crosses



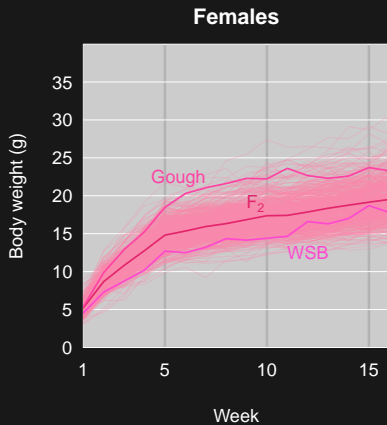
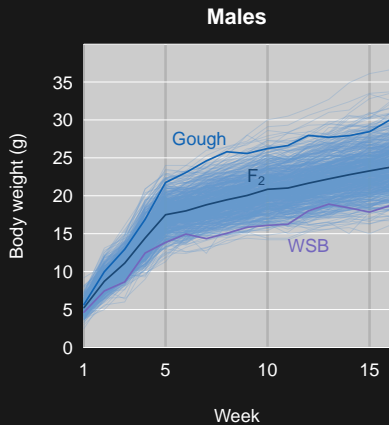
# Growth curves



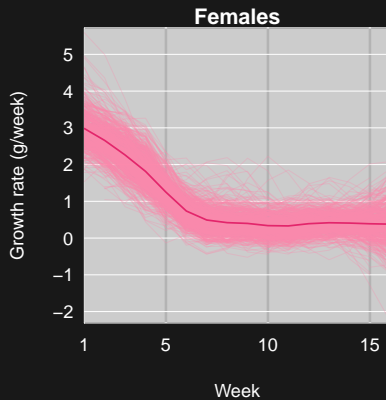
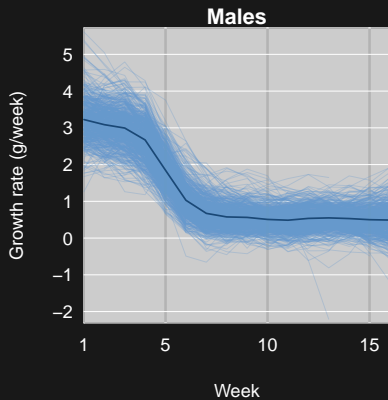
# Growth curves



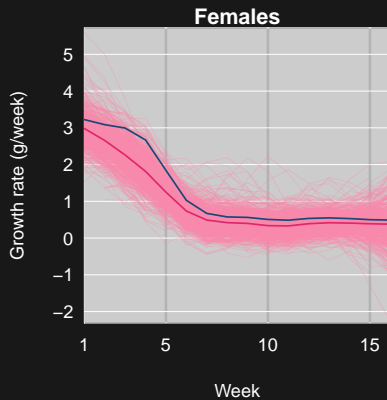
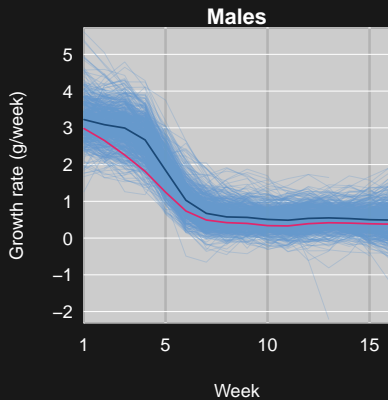
# Growth curves



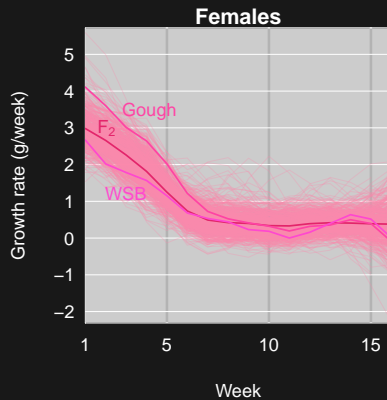
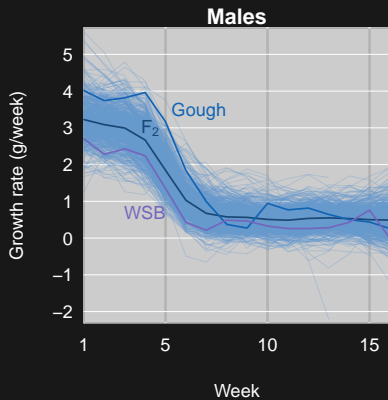
# Growth rate



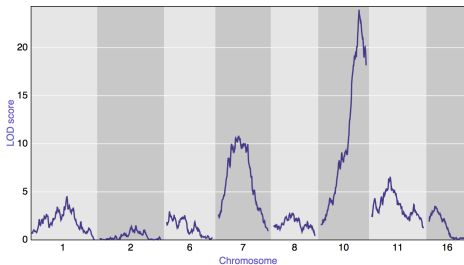
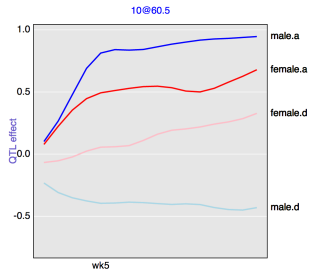
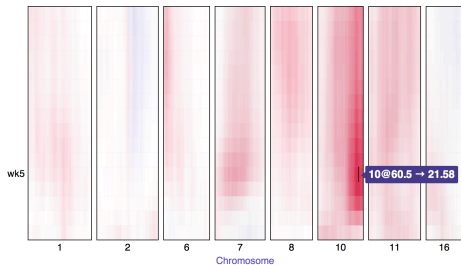
# Growth rate



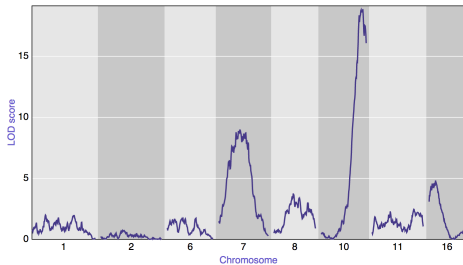
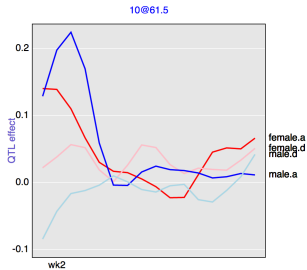
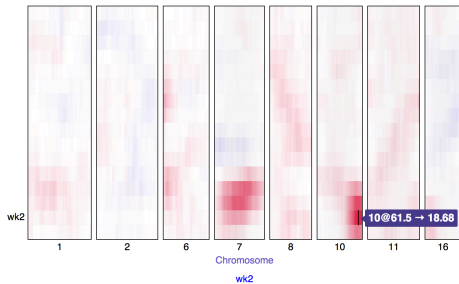
# Growth rate



# Genome scan for body weight



# Genome scan for growth rate



# Summary

- ▶ Multiple QTL contributing to body size in Gough  $\times$  WSB.
- ▶ Gough alleles result in increased size.
- ▶ The major effects are on growth rate in first five weeks.
- ▶ Interactive graphs with R/qtcharts, [bit.ly/rqtcharts](https://bit.ly/rqtcharts)

# Acknowledgments

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