

# Breed Percent

## *An added bonus of genomics*

*Rohan Butler*

*Holstein Australia*



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# The added bonuses

- Breed %
- Genomic Inbreeding



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# Breed %

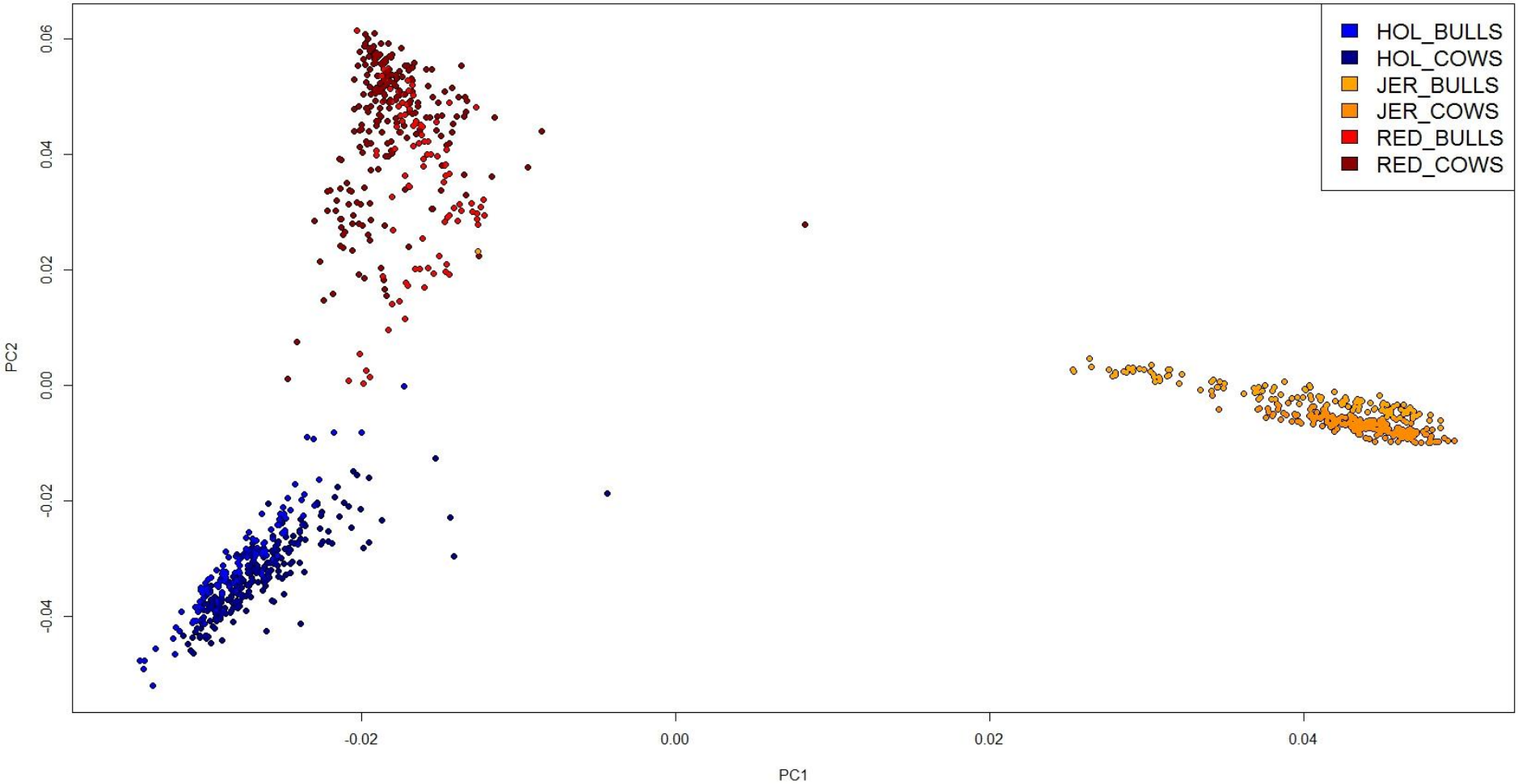
- How does it work



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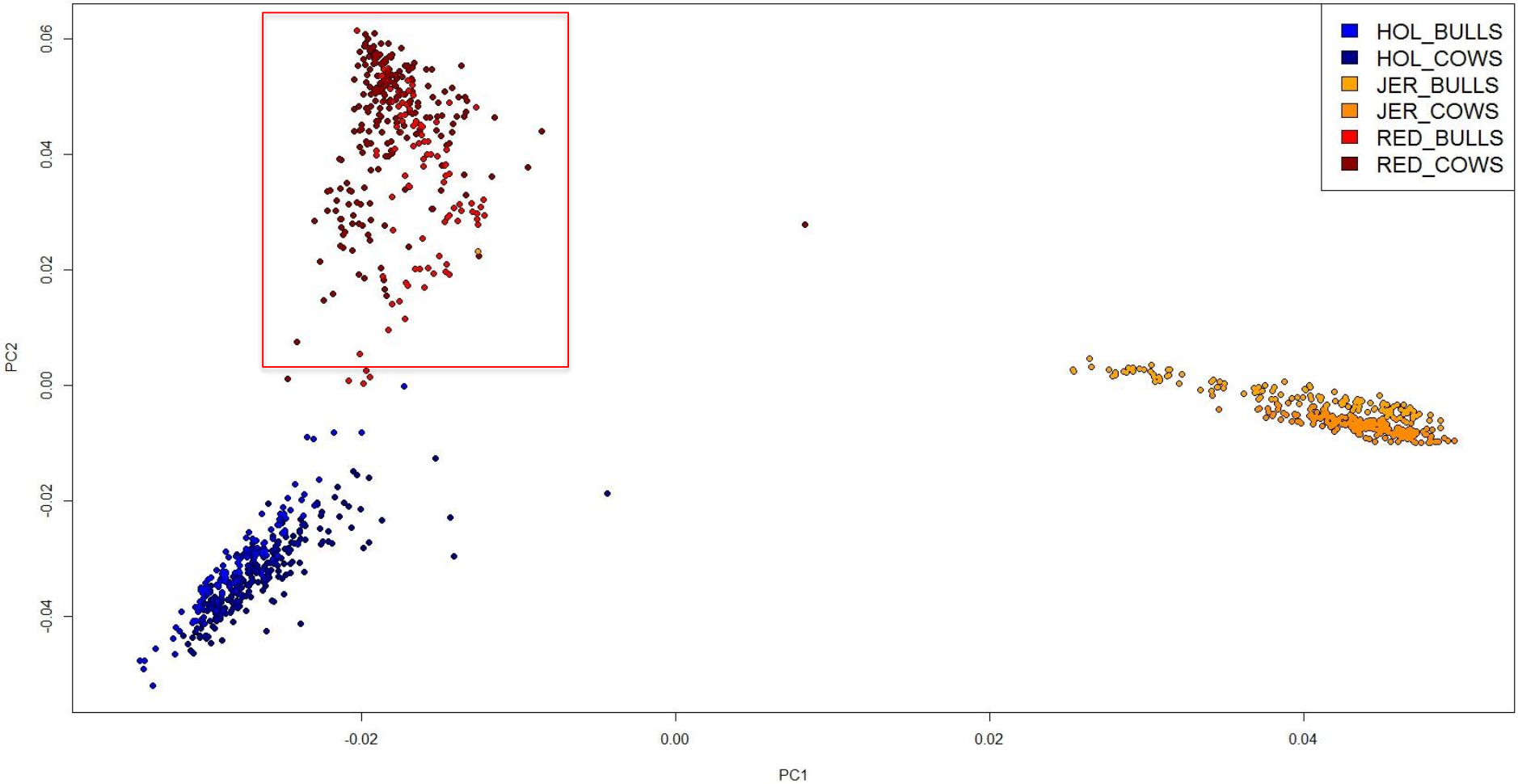
# Genetic Diversity



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**Holstein**  
AUSTRALIA

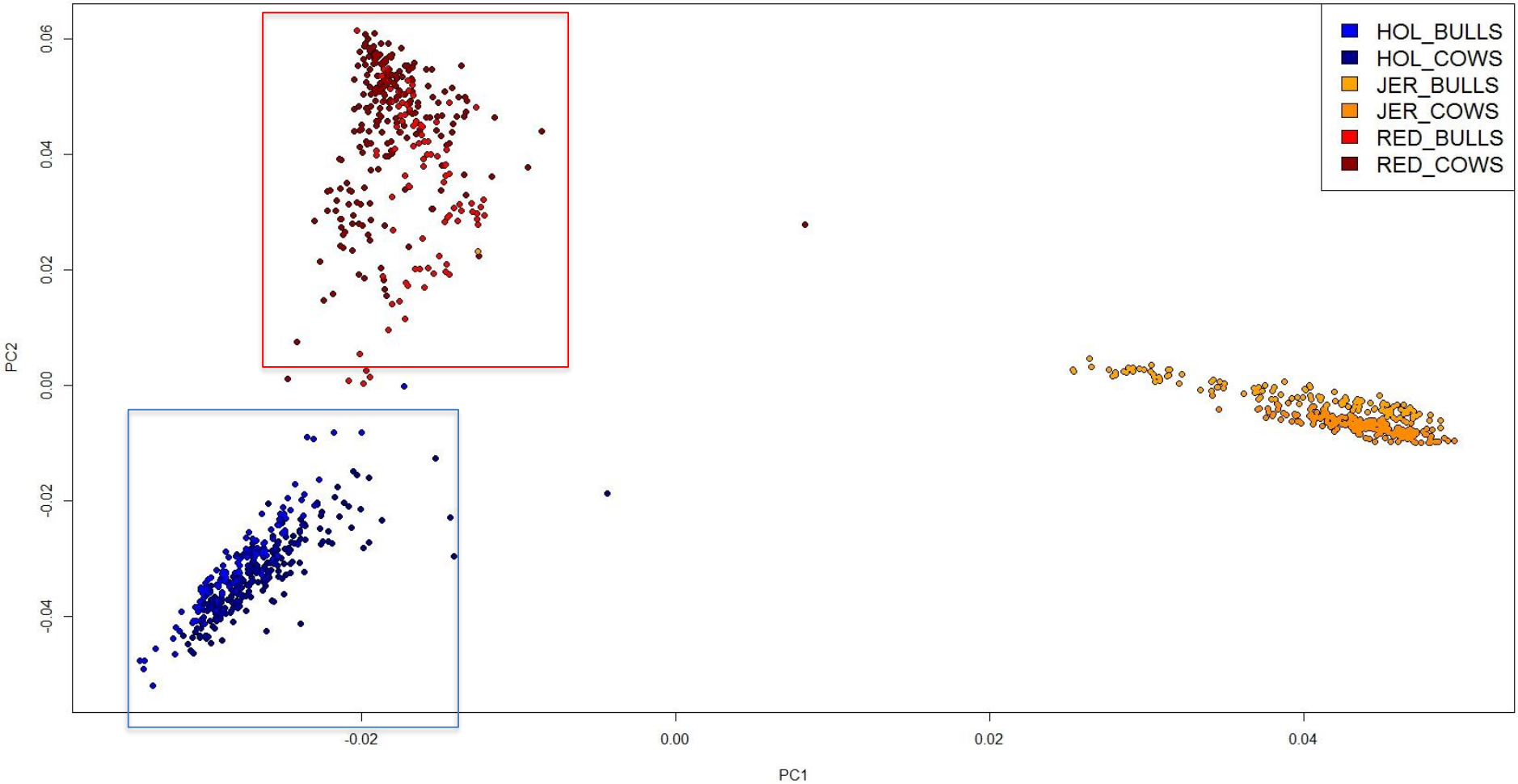
# Genetic Diversity



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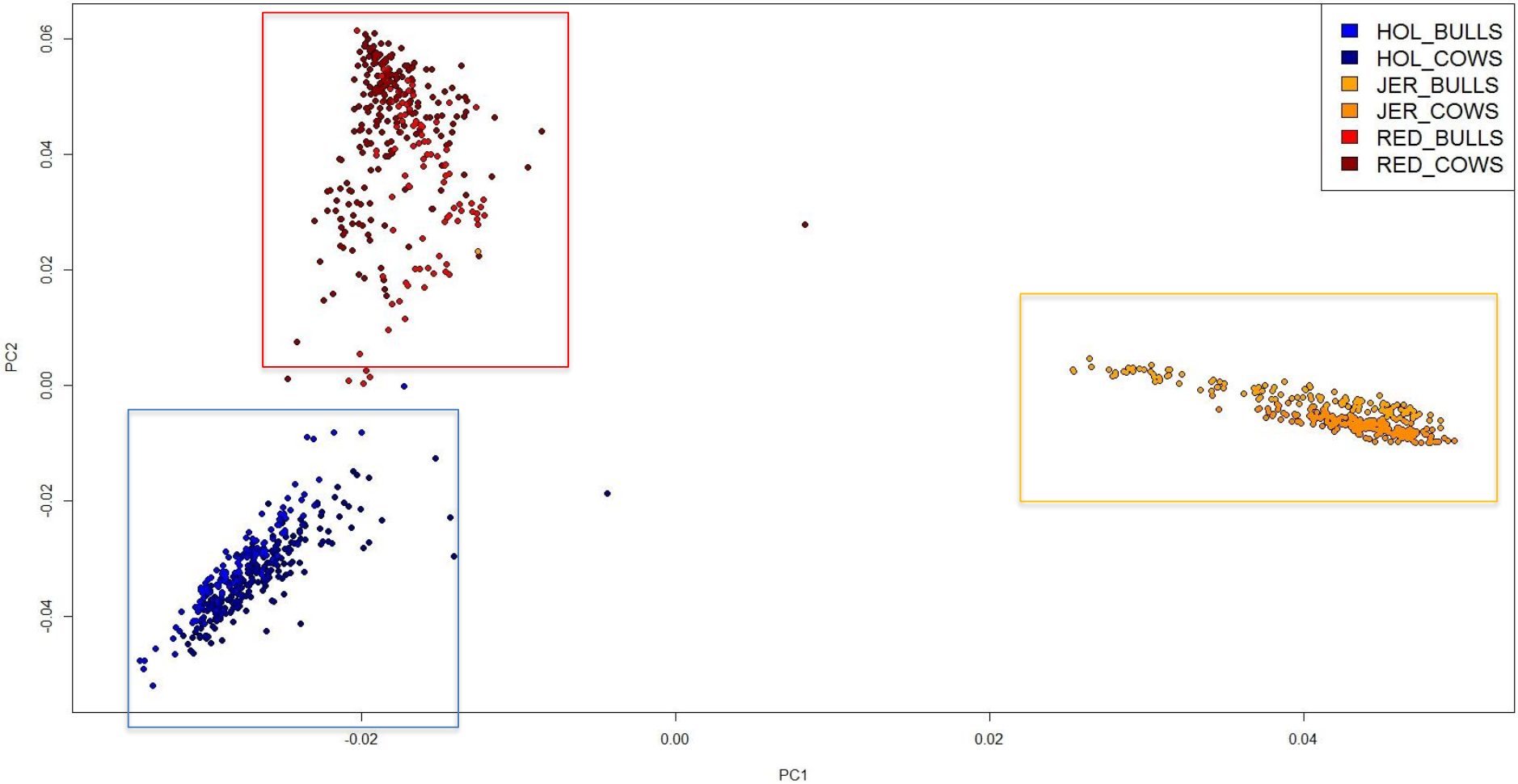
# Genetic Diversity



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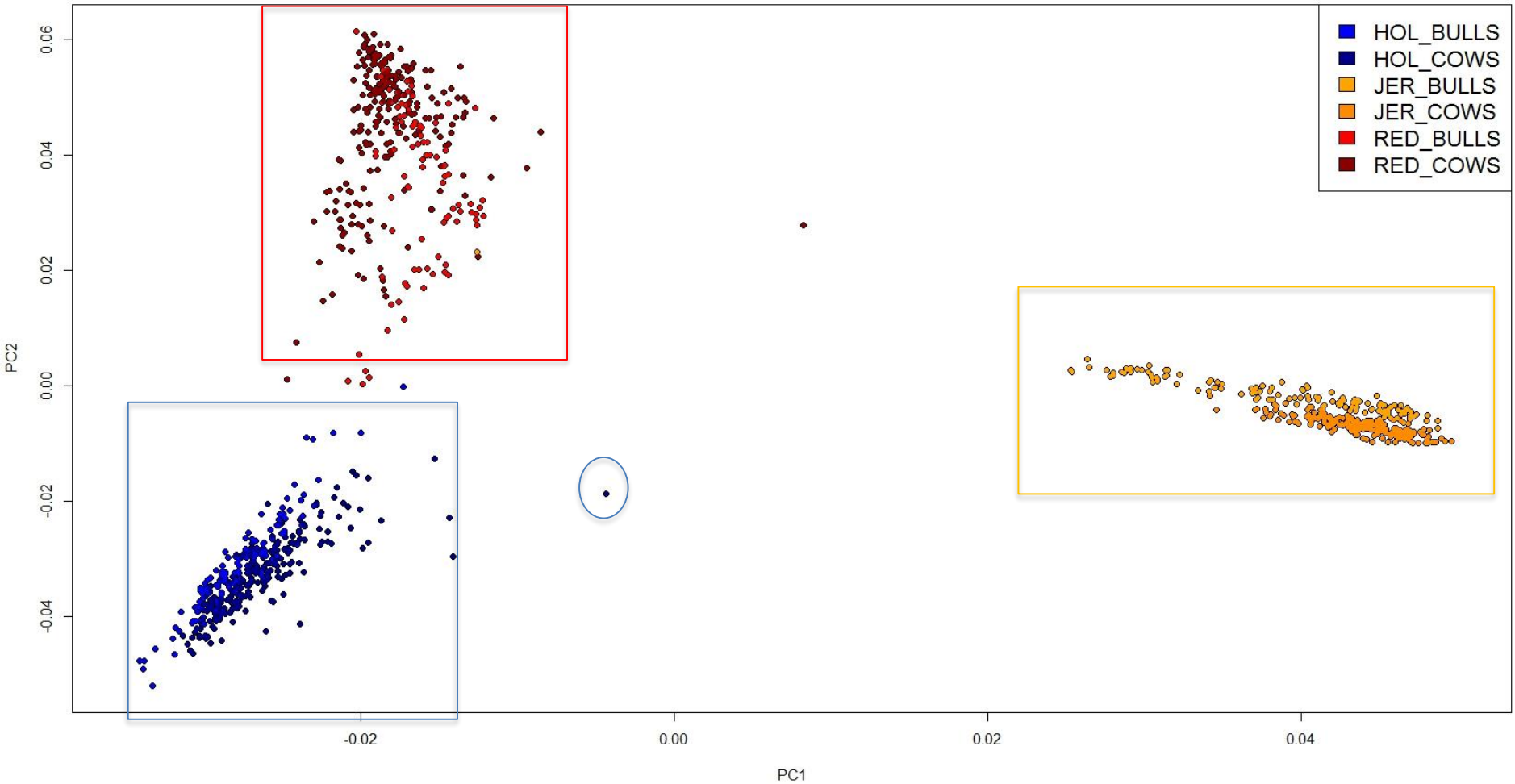
# Genetic Diversity



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**Holstein**  
AUSTRALIA

# Genetic Diversity



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**Holstein**  
AUSTRALIA



# Breed %

- How does it work?
- How accurate is it?



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# How accurate?

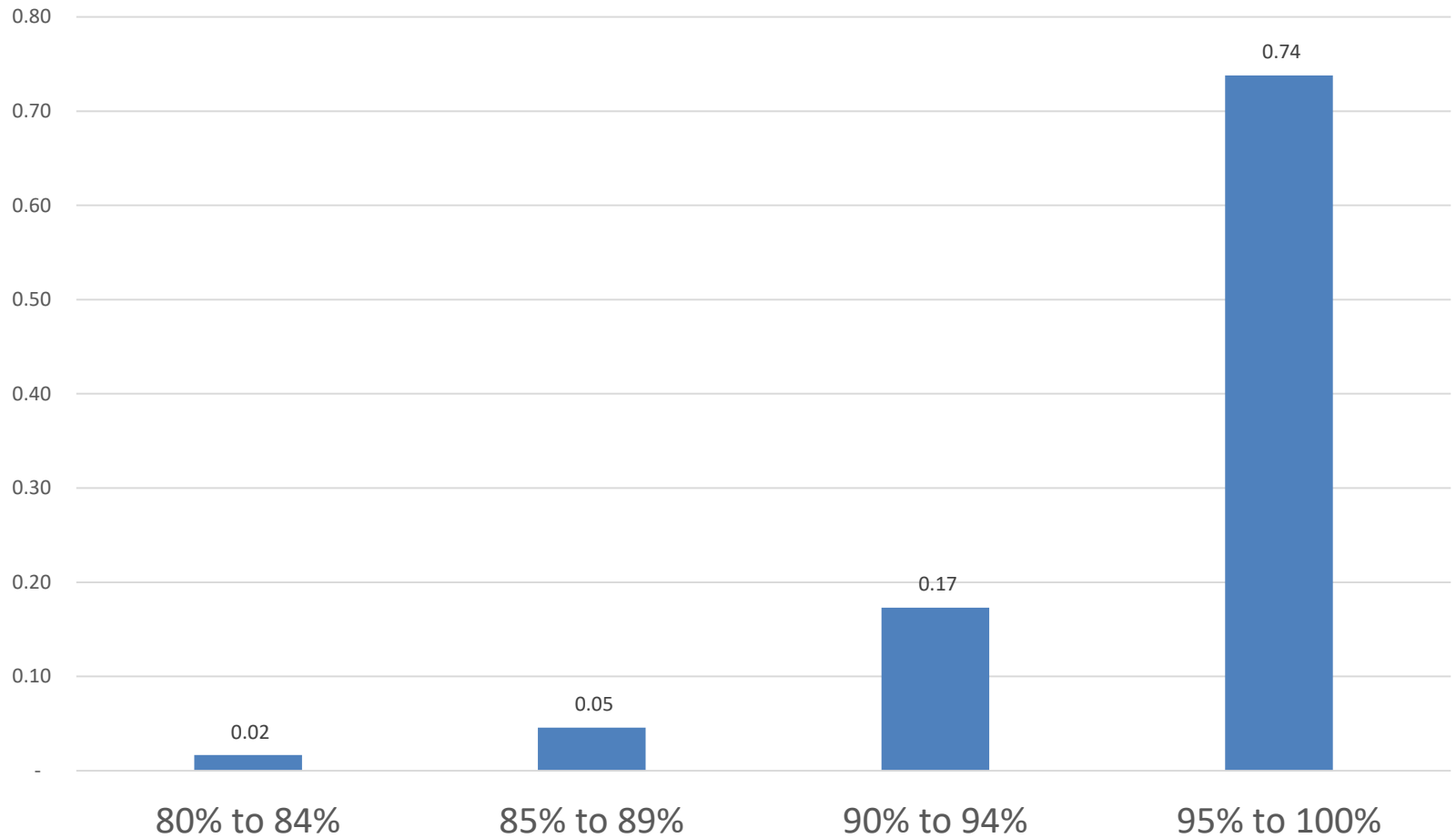
- 4% standard error
  - 94% will be between 90% and 98%
- GINFO animals
  - FFFF (minimum 3 gens Holstein breeding)
  - Most parent errors will be within breed



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## 3gen Holstein compared to Breed%



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# Breed %

- How does it work?
- How accurate is it?
- What is the value?



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# What is the value

- Identifying “purebred” cows that have no pedigree
- Identifying which sire to use in cross bred programs
- Parentage quality assurance

*It's a free addition to a genomic test*



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# Genomic Inbreeding

- Previously paper calculation based on the recorded pedigree
- Genomics can calculate it based on actual genetic information

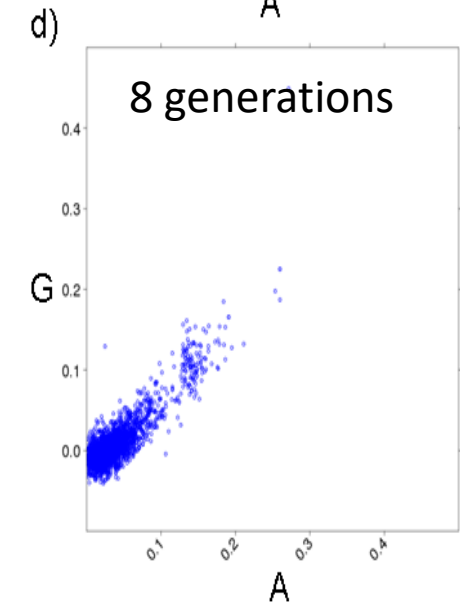
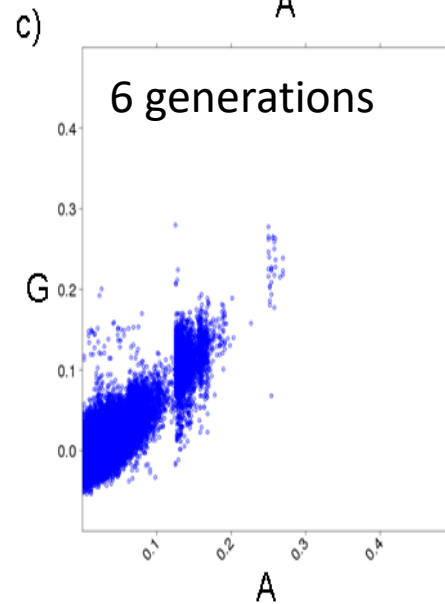
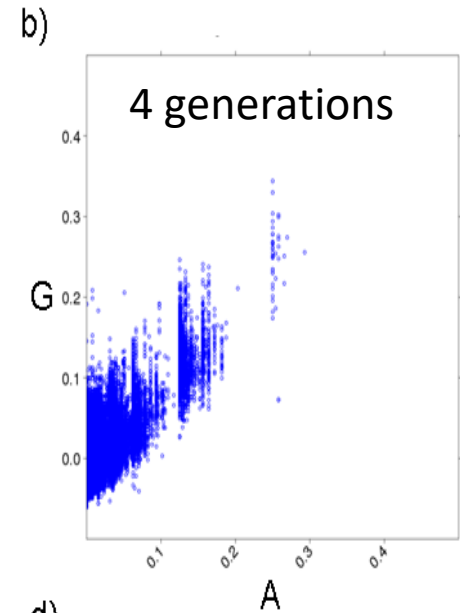
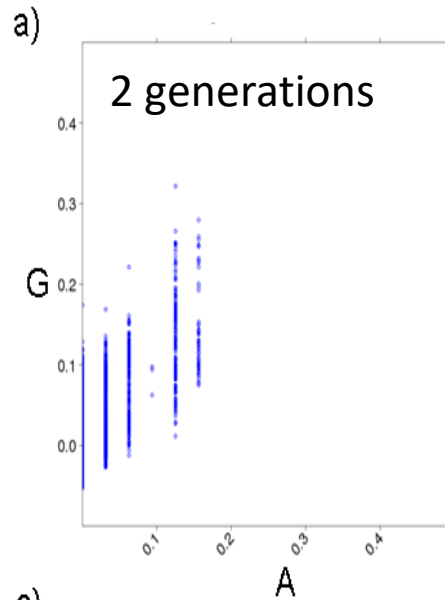


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Value of genomics greater for shallower pedigrees.

Correlation between pedigree (A) and genomic (G) relationship matrix increases with generations of ancestry.



# Genomic Inbreeding

- What is the value?
  - Improved accuracy of mate selection
  - Expect AI companies to add this technology to their mating programs



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# Acknowledgements

- Jennie Pryce
- Ben Hayes
- Tim Hancock



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