



CRC

for

Premium

Quality

Wool

# Improvements in Wool Production Using Skin Traits

Produced for the CRC for Premium Quality Wool undergraduate program by;  
Dr. Michelle Nancarrow, CSIRO Animal Production.



# Summary of effect of skin traits on wool production and quality

- No single factor determines differences in wool production between sheep of different genotypes (phenotypes), rather it is an additive effect of a number of follicle characteristics (particularly the germinative volume of the skin) and the supporting physiology of the skin.
- There are still a lot of areas to be examined before we can really understand what is happening (e.g. gene control, nutrient uptake).

CRC

for

Premium

Quality

Wool



# How can follicle biology contribute to improving sheep?

- conventional breeding → slow
- new technologies → faster
- wool follicle biology → tools to aid selection
- develop new selection criteria
- more accurate breeding values
- DNA technologies

CRC

for

Premium

Quality

Wool



# DNA tests for genotype

- 27 pairs of chromosomes
- one inherited from each parent
- DNA tests for variations in the genetic code:
  - sample taken (blood usually)
  - DNA purified from the cells
  - segment of interest amplified by PCR
  - separated by electrophoresis and analysed

CRC

for

Premium

Quality

Wool