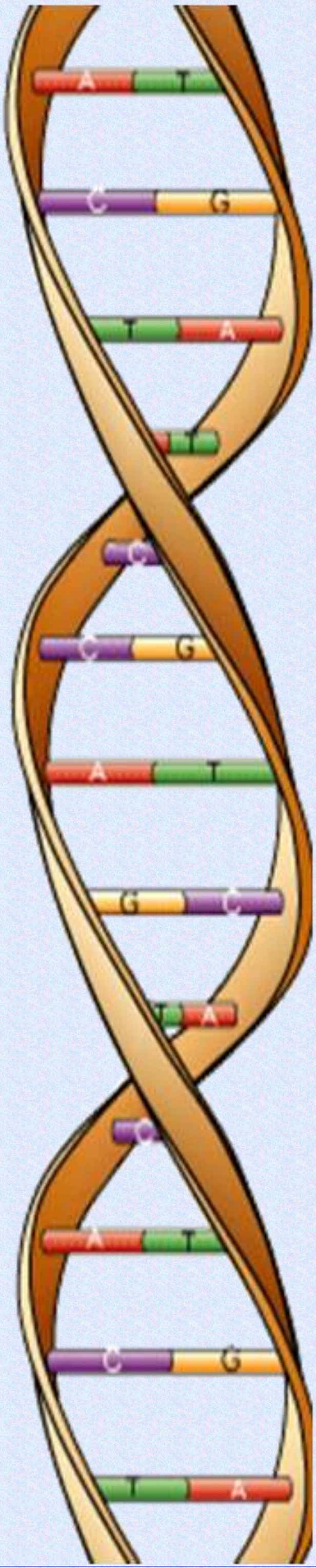
Moving to state-of-the-art genetic evaluation for beef cattle



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In response to concerns voiced by Angus Breeders, changes have been made in the genetic analysis of Angus cattle for carcass traits. Overall, these changes result in a truer picture of differences in genetic merit than was previously available. Briefly outlined below are some of the changes and the reasoning behind them.

1) **Assessed potential data integrity and structure issues**—Accurate data, structured to insure fair comparisons, is the foundation upon which a genetic evaluation is built. Revised editing procedures help make this goal a reality.

2) **Combined analysis of data collected using ultrasound and at harvest** —Reconciles discrepancies in EPDs calculated for the same conceptual traits (i.e., IMF and marbling) when they were analyzed separately. Allows the correct relative emphasis to be given each source of information.

3) **Changed analysis of carcass traits from sire model to animal model**—Provides breeders increased opportunity to make genetic improvement. It also reduces the opportunity to bias genetic evaluation through selection of mates.

4) **Incorporated deeper pedigree**—Provides a truer reflection of genetic relationships between animals. This provides greater connectedness between animals and across contemporary groups, particularly over time.

5) **Changed use of data collected from steers using ultrasound**—Eliminates need for adjusting these data to a carcass basis before analysis, thus eliminating a potential source of increased error.

6) **Used traits recorded via ultrasound as indicators of carcass merit**—Recognizes animals measured using ultrasound are neither intended nor ready for harvest; but captures this information via the genetic correlations.

7) **Updated estimates of genetic parameters**—Improves reflection of differences in genetic merit between animals.

8) **Update calculation of accuracy values**—Better indicates potential changes in an animal's EPDs. Animals whose ultrasound measurements provide the vast majority of information have marked slippage in accuracy values relative to accuracies of their previous ultrasound derived WPDs. These animals also move toward average in percentile rankings.

9) **Treated ultrasound data from bulls, heifers, and steers as separate traits**—Bulls, heifers, and steers are physiologically distinct beasts that are managed differently after weaning. Underlying genetic control of carcass traits may differ by gender. This is now reflected in the genetic prediction system.

10) **Reduced opportunity for selection to bias the evaluation**—By placing priority on data collected using ultrasound over carcass data of a culled sample from the same yearling contemporary group.

11) **Evaluated use of genomic data in calculating EPD**—Companies market genomic tests for economically relevant traits. However, today results of these tests are inefficiently used.