

# Synopsis of the American Simmental Association's Involvement in the Advancement of Genomic Technology



AMERICAN  
**Simmental**  
ASSOCIATION

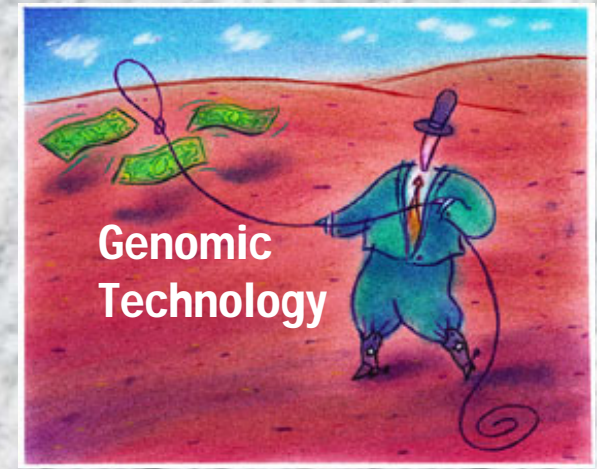
**406-587-4531**

e-mail: [simmental@simmgene.com](mailto:simmental@simmgene.com)  
website: [www.simmental.org](http://www.simmental.org)

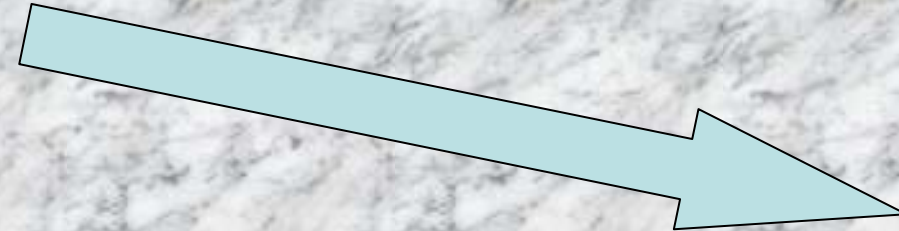
Fred Schuetz  
Buzzard Hollow Ranch  
Granbury, Texas USA

# Beef Improvement Federation Position Statement (11-07):

“Information from DNA tests only has value in selection when incorporated with all other forms of performance information for economically important traits in National Cattle Evaluation, and when communicated in the form of an EPD with a corresponding accuracy. For some economically important traits, information other than DNA may not be available. Selection tools based on these tests should still be expressed as EPD within the normal parameters of National Cattle Evaluation.”

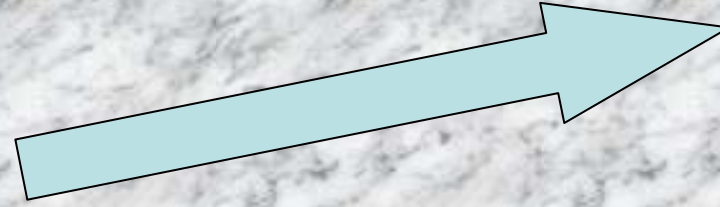


DNA



EPD

Phenotypes



# Critical First Step



In 2005 the American Simmental Association published the world's first beef cattle EPDs that combine genomic and phenotypic information

# More Steps...

- ✓ Publication of industry's first DNA-assisted EPDs
- ✓ Long term, ongoing collaboration with University of Illinois and Montana State University to annually collect ~ 600 phenotypes and DNA samples on pedigreed steers and their heifer mates to study numerous traits including those seldom collected such as disposition, tenderness, feed utilization, feed intake and reproduction
- ✓ Supplied University of Missouri with over 1500 sire-identified tenderness phenotypes and corresponding DNA samples to assist in determining genotypic function via the use of 50K SNP panel
- ✓ Participation in United States Department of Agriculture's (USDA) "2000 sire project" by providing DNA samples on 240 Simmental sire contribute to the development of equations to predict genetic merit across breeds for various traits based on genomic information
- ✓ Simmental breeders are currently supplying over 1,000 DNA and corresponding phenotypic samples for USDA's "Weight Trait" project to assist in validation of equations to predict genetic merit for weight traits from genomic information
- ✓ Development of comprehensive genetic defect policy and associated software that leverages modern DNA testing to mitigate the impact of genetic defects on Simmental population
- ✓ Collaboration with Texas A&M University to develop a DNA test to determine animals that carry the "spotting" gene



Dr. Mike Tess  
Dr. John Paterson

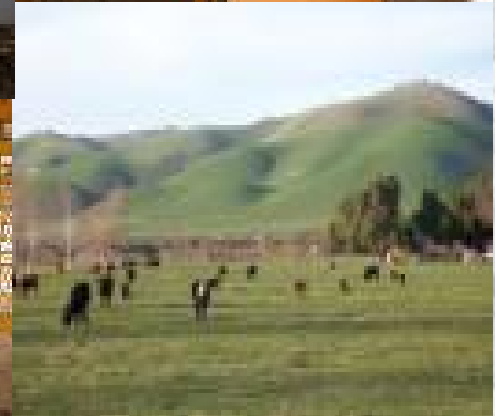
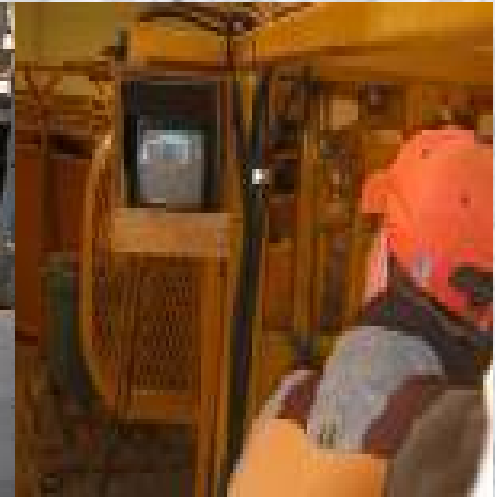


Dr. Dan Faulkner  
Dr. Larry Berger



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website: [www.simmental.org](http://www.simmental.org)

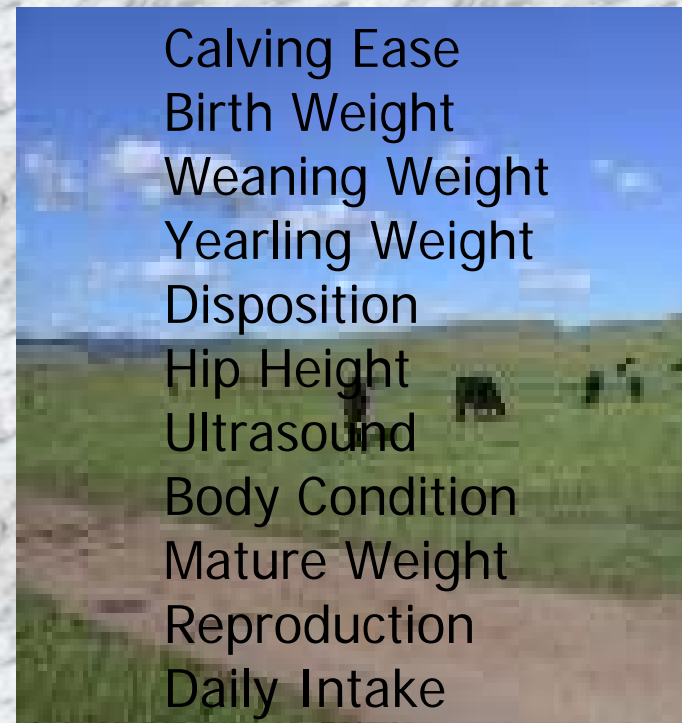
Marty Ropp  
Dr. Jerry Lipsey  
Dr. Wade Shafer



Over 3,000 commercial cows are annually AI mated to Simmental and other breed sires



28-d Serial Weights  
Serial Ultrasound  
Daily Intake  
Disposition  
Carcass Weight  
Marbling  
Rib Eye  
Backfat  
Shear Force



Calving Ease  
Birth Weight  
Weaning Weight  
Yearling Weight  
Disposition  
Hip Height  
Ultrasound  
Body Condition  
Mature Weight  
Reproduction  
Daily Intake

# Goal



Develop one of the world's most comprehensive and extensive databases to facilitate the study of economically important traits which will ultimately result in the development of tools and information that will allow Simmental breeders to breed the best cattle possible



# cost



Actual costs to the ASA are approximately \$50,000/yr, while the total cost to maintain the project is many times that. Fortunately, our collaborators pick up the majority of the cost.

The Simmental breed benefits greatly from this project; however, with difficult financial times we do not know if we can continue to fund this project.

