

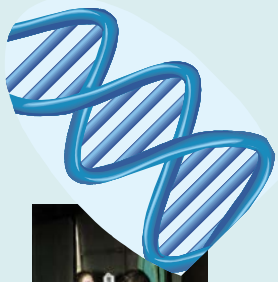
# Genomic Update



**Wade Shafer**  
**American Simmental Association**

 **SimGenetics**  
PROFIT THROUGH SCIENCE  
American Simmental Association

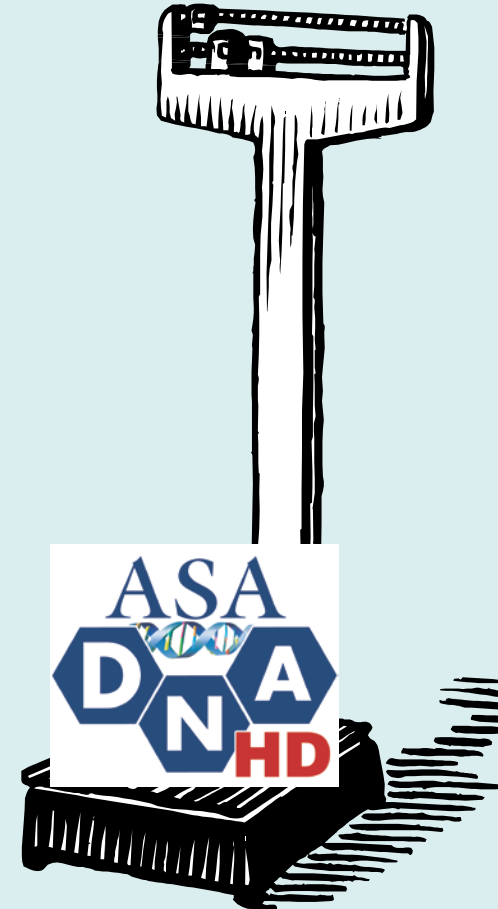
# Initial ASA training...



**2800**

**Genotypes**

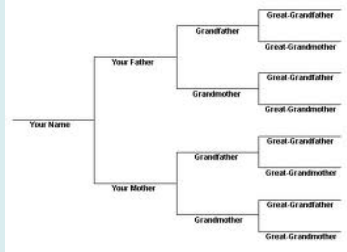
Trait	Corr	Progeny
CE	.45	5
BW	.65	6
WW	.52	4
YW	.45	3
Mlk	.35	3
MCE	.32	3
Stay	.58	9
Sh Force	.53	6
Mrb	.63	4
REA	.59	4
BF	.28	1
U Mrb		10
U REA		8
U BF		1



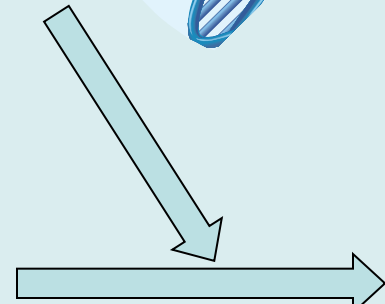
# Using the information...

Implemented Spring 2012

Pedigrees  
Phenotypes



Multi-breed  
International  
Cattle Evaluation



EPD  
Acc



# Multi Breed International Cattle Evaluation...



15,000,000+ animals  
350,000+ / year

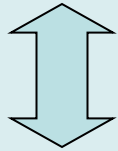


Canadian Gelbvieh Association  
[www.gelbvieh.ca](http://www.gelbvieh.ca)



# Results of Collaboration ...

**Phenotypes/Pedigrees:  
15,000,000+ animals**



**Genotypes:**

Source	Genotypes
ASA	5240
NBCEC (AN)	2164
RAAA	1604
AGA	999
AMAA	571
CGA	85



## Correlations

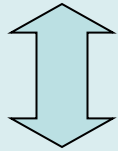
Trait	ASA Old	ASA Coll
CE	.45	.45
BW	.65	.67
WW	.52	.63
YW	.45	.64
Mlk	.35	.47
MCE	.32	.32
Stay	.58	.77
Sh Force	.53	.53
Mrb	.63	.74
REA	.59	.59
BF	.28	.27

**>=**



# Results of Collaboration ...

**Phenotypes/Pedigrees:**  
**15,000,000+ animals**



**Genotypes:**

Source	Genotypes
ASA	5240
NBCEC (AN)	2164
RAAA	1604
AGA	999
AMAA	571
CGA	85



## Progeny Equivalents

Trait	ASA Old	ASA Coll
CE	5	5
BW	6	7
WW	4	8
YW	3	9
Mlk	3	8
MCE	3	3
Stay	9	28
Sh Force	6	6
Mrb	4	8
REA	4	4
BF	1	1
U Mrb	10	18
U REA	4	4
U BF	1	1

**>=**



# Results of Collaboration ...

**Phenotypes/Pedigrees:  
15,000,000+ animals**



**Genotypes:**

Source	Genotypes
<b>ASA</b>	<b>5240</b>
NBCEC (AN)	2164
RAAA	1604
AGA	999
AMAA	571
CGA	85



## Progeny Equivalents

Trait	ASA Only	ASA Coll
CE	5	5
BW	6	7
WW	5	8
YW	5	9
Mlk	7	8
MCE	3	3
Stay	28	28
Sh Force	6	6
Mrb	4	8
REA	4	4
BF	1	1
U Mrb	12	18
U REA	4	4
U BF	1	1

**>=**





The Future

NEXT EXIT 



# Collaboration...



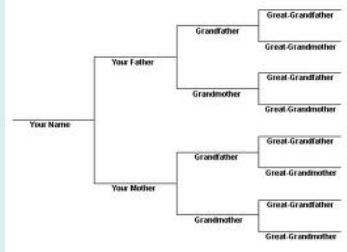
Breed	Genotypes
Simmental	24,188
Angus	16,350
Gelbvieh	4,683
Limousin	4,446
Red Angus	4,158
Main Anjou	1,437
Shorthorn	854
<b>Total</b>	<b>56,116</b>



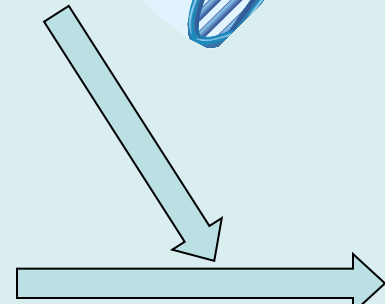
# Using the information...

Implemented Spring 2014

Pedigrees  
Phenotypes



Multi-breed  
International  
Cattle Evaluation



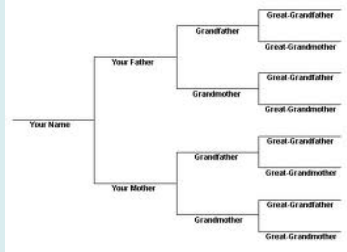
EPD  
Acc



# Using the information...

**DNA** Targeting Spring 2016

**Pedigrees**  
**Phenotypes**



**Multi-breed**  
**International**  
**Cattle Evaluation**

**EPD**  
**Acc**



# Using the information...



**Dorian Garrick**



**Bruce Golden**



**Wringing everything possible out of available information... Building the next generation of National Cattle Evaluation software**

# Using the information...

## Existing NCE Software:



- ✓ **Not well suited for DNA incorporation**
- ✓ **Can produce dubious accuracy estimates**
- ✓ **Not written to optimize modern hardware configurations**

