

# How do genomic proofs hold up?

We're well into the genomic era. If you're like most producers, you're now comfortable incorporating genomic-proven bulls as part of your balanced breeding program.

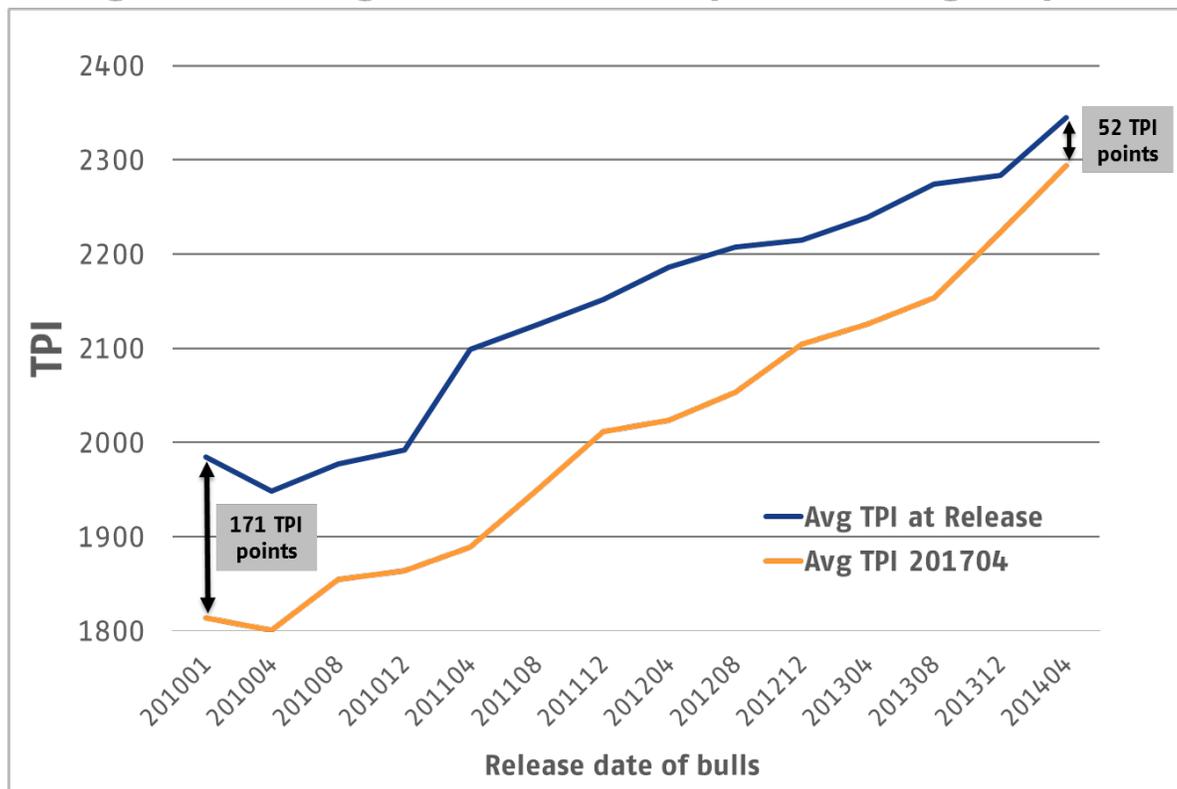
Yet, you might still have questions about the difference you can expect between a bull's first genomic proof and his daughter proof. To answer your questions, we've done an in-depth proof analysis of all industry bulls. Our goal was to find out how genomic proofs hold up. Do they become more or less accurate with time?

## What did we learn?

Graph 1 shows the average change in TPI from initial genomic proofs to April 2017 daughter proofs. The TPI change from genomic to daughter proof is the amount of space that separates the blue and orange lines.

### Graph 1.

Change in TPI from genomic release to April 2017 daughter proof



This graph includes all industry bulls released between January 2010 and April 2014. As you can see, the bulls released in January 2010 had an average change of 171 TPI points from their first genomic release to their April 2017 daughter proof.

Now, fast forward a few years. Bulls released as genomic sires in April 2014 saw only a 52 point TPI difference from their initial genomic proof to their April 2017 daughter proof.

This means the stability in GTPI from genomic release until daughter proofs has improved by more TPI points! As a bonus, it's clear to see that the genetic levels of bulls continue to rise!

than 100

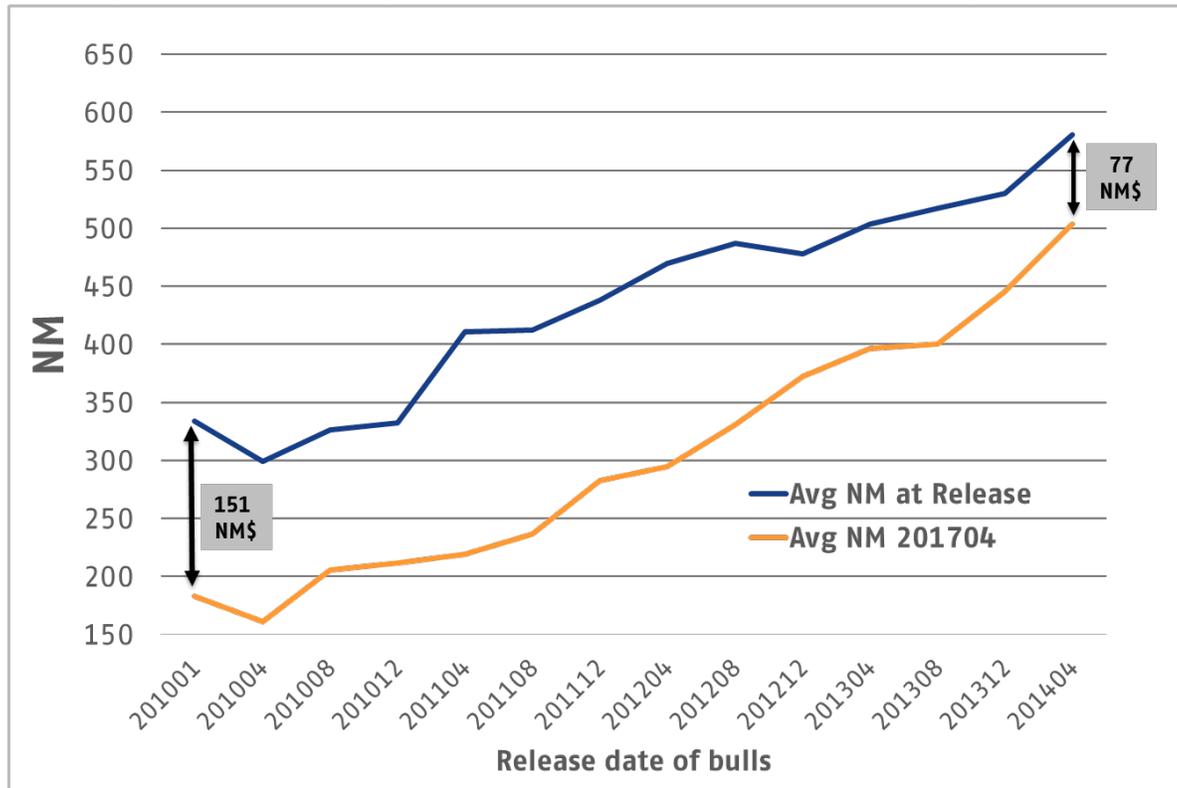


The same goes for Net Merit \$. You can discover those results in Graph 2.

Industry bulls first released as genomic-proven sires in January 2010 dropped, on average, 151 NM\$ from their first release until their April 2017 daughter proof. Whereas, the bulls first released as genomic sires in April 2014 only changed 77 NM\$ from their initial release.

## Graph 2.

### Change in NM\$ from genomic release to April 2017 daughter proof



So, even though genomic numbers are still slightly inflated, the gap between genomic and daughter proofs changes less with each passing proof round.

### Want more details?

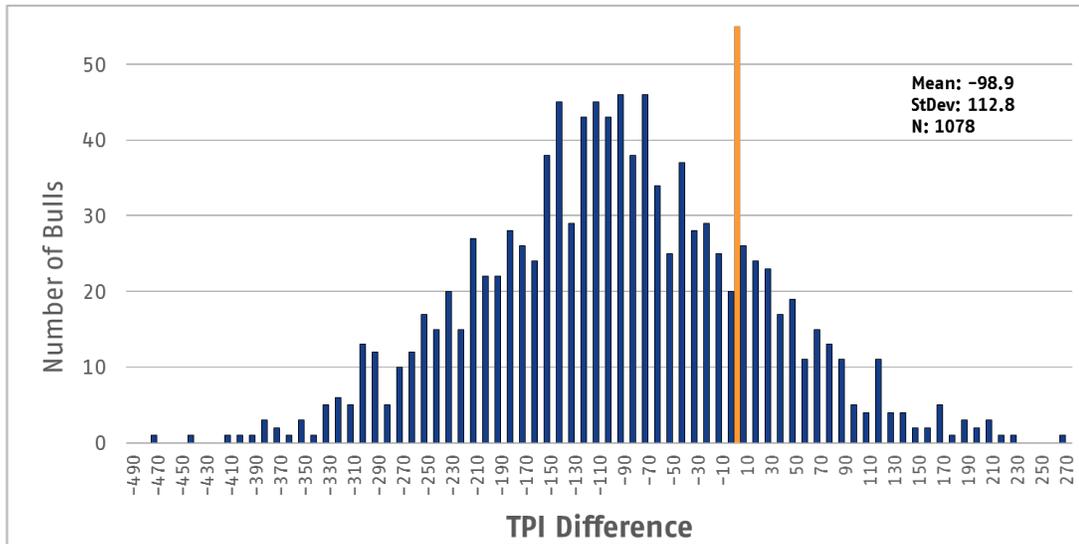
Let's look at the facts and figures in a different light. We'll focus in on all 1,078 industry bulls released in 2013. We use this group because all bulls released in 2013 should now have a daughter proof for production, health and conformation traits.

The bell-shaped curve of Graph 3 shows the mean and standard deviation change in TPI on the 1,078 industry bulls released as genomic-proven sires in 2013.



### Graph 3.

Histogram of difference in TPI from genomic release in 2013 to daughter proof in April 2017



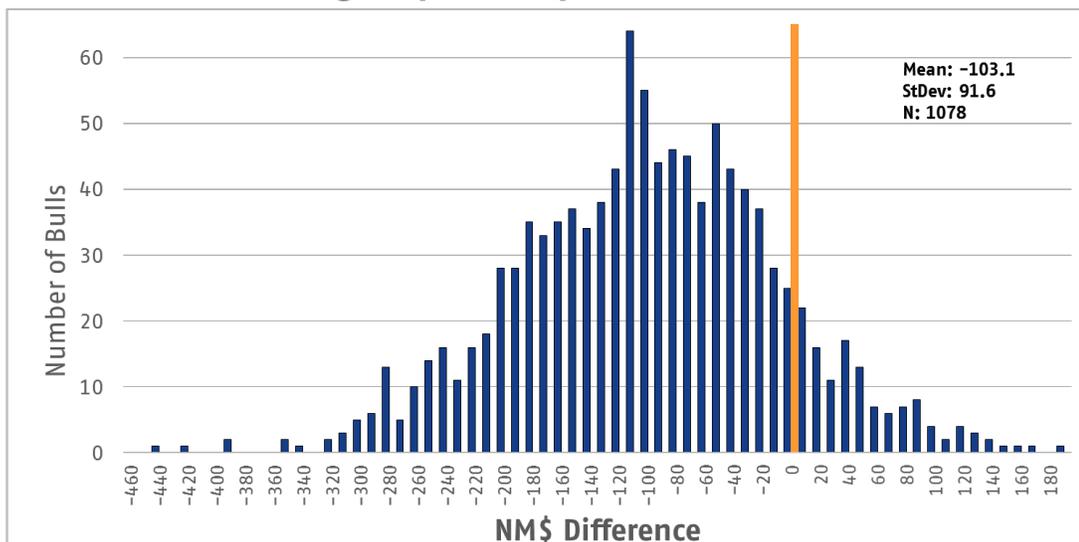
As you can see, on average, these bulls changed less than 100 points from their initial release in 2013 to their daughter proof in April 2017. One hundred of these bulls have a daughter-proven TPI within just twenty points of their original genomic TPI. Only about 40 bulls from the entire group of 1,078 lost more than 300 TPI points – that’s less than 4%.

We see the same trend for NM\$. Graph 4 shows the average NM\$ change and standard deviation of the same 1,078 industry bulls released in 2013. These sires changed about -103 NM\$ from their initial genomic proof in 2013 to their daughter proof in April 2017.

Ninety-five bulls held steady within the small 20 point swing from genomic to daughter-proven NM\$. Less than 20 bulls changed more than 300 NM\$.

### Graph 4.

Histogram of difference in NM\$ from genomic release in 2013 to daughter proof in April 2017



## What are your options today?

Still debating whether daughter-proven or genomic-proven sire groups are your best option? Take a look at the top 10 TPI sires available from Alta today.

APRIL 2017 Top daughter-proven sires		TPI
11H011434	<b>AltaCR</b>	2531
11H011379	<b>AltaRABO</b>	2476
11H011348	<b>AltaBGOOD</b>	2474
11H011143	<b>AltaEMBASSY</b>	2462
11H011380	<b>AltaROBLE</b>	2461
11H011283	<b>AltaMERCI</b>	2450
11H011272	<b>AltaGILCREST</b>	2444
11H011446	<b>AltaPITA</b>	2430
11H011202	<b>AltaOAK</b>	2425
11H011405	<b>AltaKADO</b>	2419
<i>Average</i>		<b>2457</b>

APRIL 2017 Top genomic-proven sires		TPI
11H011630	<b>AltaMORENO</b>	2742
11H011778	<b>AltaROBSON</b>	2733
11H011725	<b>AltaAMULET</b>	2712
11H011724	<b>AltaSTEEL</b>	2684
11H011826	<b>AltaLOBELLO</b>	2681
11H011758	<b>AltaNIXER</b>	2676
11H011672	<b>AltaKERMIT</b>	2667
11H011736	<b>AltaRECOIL</b>	2656
11H011734	<b>AltaPOLISH</b>	2651
11H011720	<b>AltaFLYWHEEL</b>	2643
<i>Average</i>		<b>2685</b>

Currently, our top daughter-proven sires average a solid 2457 TPI. Yet, the top, available genomic-proven group provides a 228 point TPI advantage!

Some bulls gain points and some bulls lose points. But your odds are nearly zero that every single bull atop the genomic-proven list would drop to rank lower than the current list of daughter-proven sires.

As you make your genetic selection decisions, keep in mind:

1. Genomic proofs are slightly inflated. Yet, with each proof round, we see less change from genomic to daughter-proven TPI and NM\$ because of model adjustments made along the way.
2. The average TPI and NM\$ change from genomic proof to daughter proof for bulls released in 2013 is about -100. Despite that change, you still make much faster genetic progress using a group of genomic-proven sires than a group of daughter-proven sires.
3. Make sure the genetic progress you make is in the direction of your goals. Select a group of genomic-proven sires based on your customized genetic plan. Emphasize only on the production, health or conformation traits that matter most to you to boost your farm's future profitability.

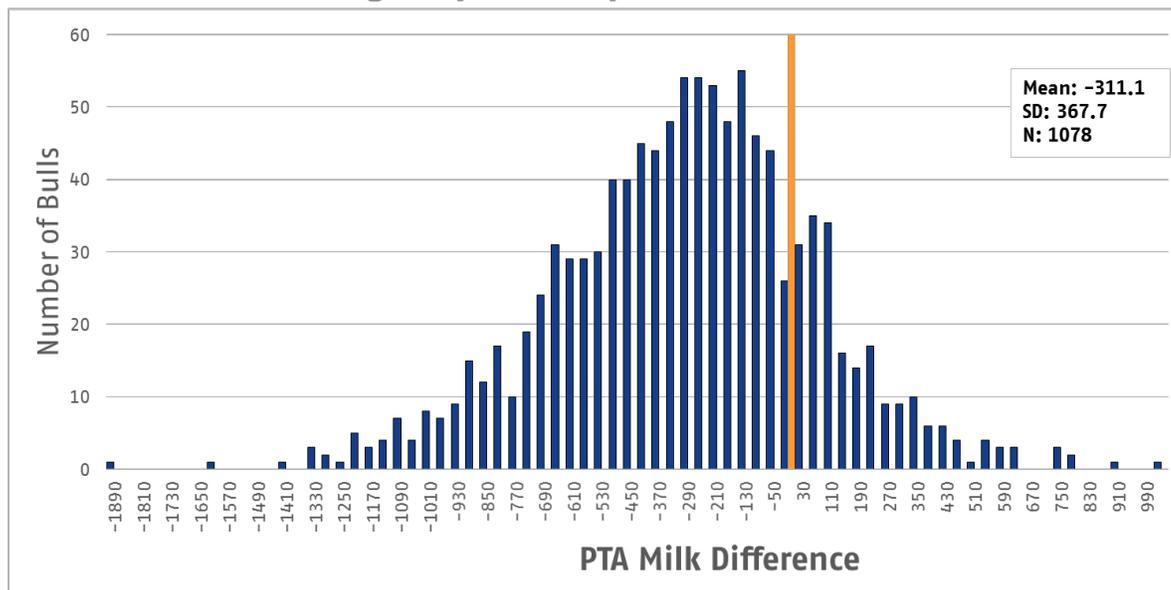
*Proof analysis and graphs provided by Ashley Mikshowsky, PEAK Geneticist*

Read on to see graphs of the average change in individual traits from genomic release in 2013 to daughter proof in 2017.



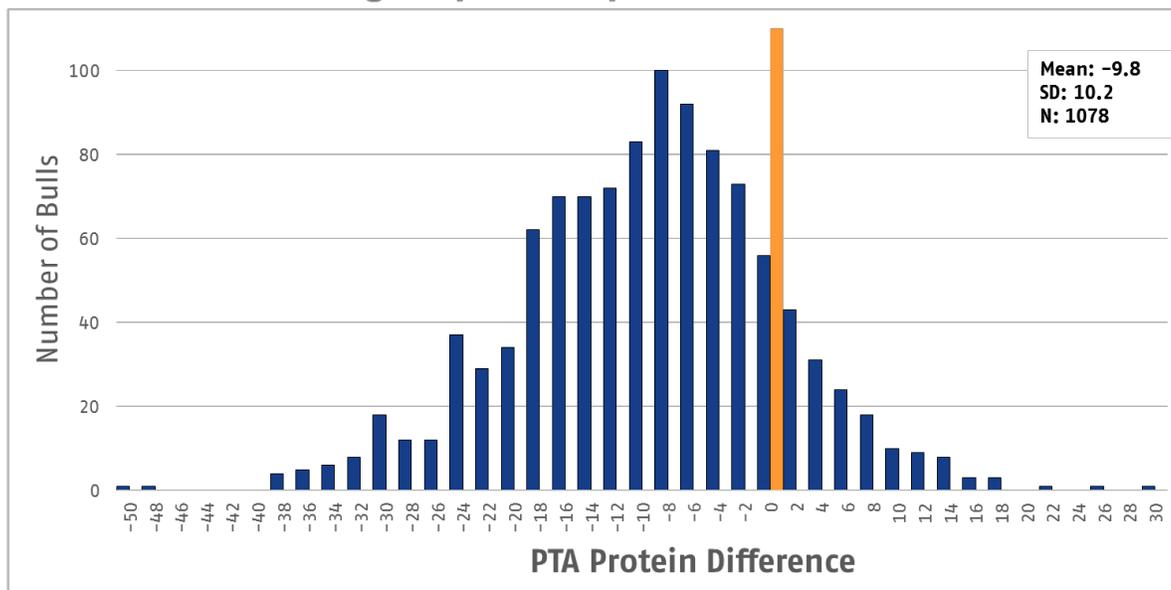
## Graph 5.

Histogram of difference in PTA Milk from genomic release in 2013 to daughter proof in April 2017



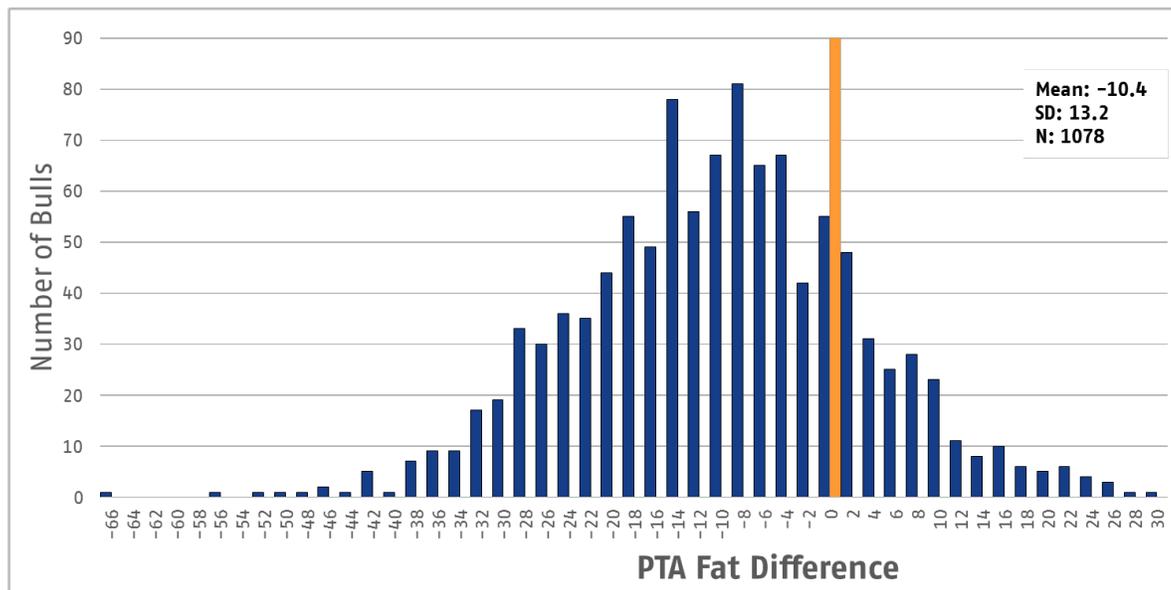
## Graph 6.

Histogram of difference in PTA Protein from genomic release in 2013 to daughter proof in April 2017



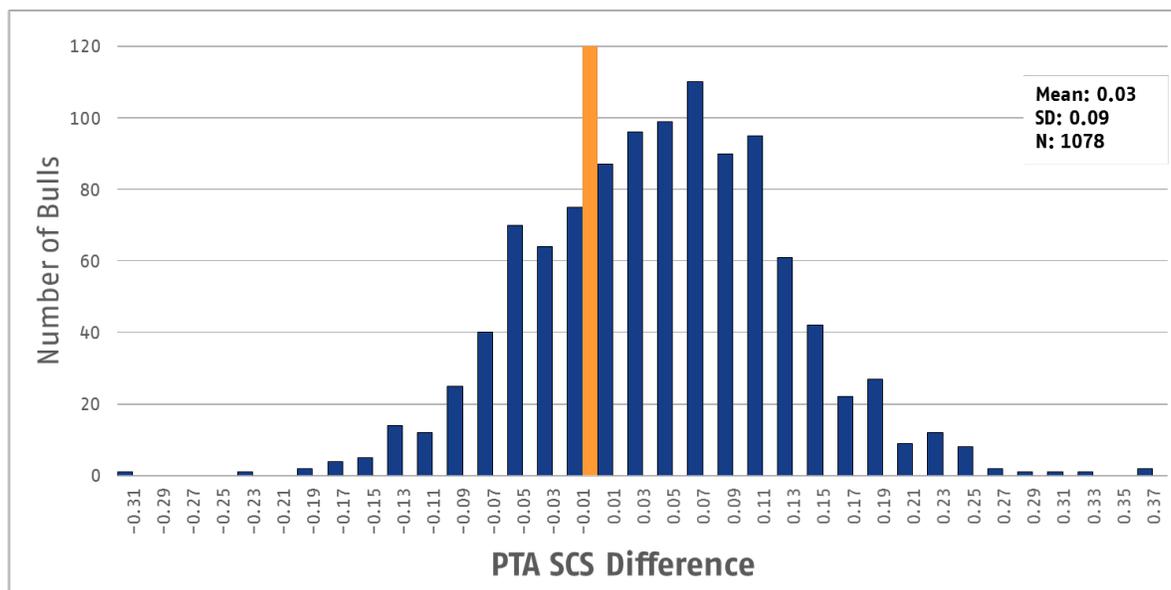
## Graph 7.

Histogram of difference in PTA Fat from genomic release in 2013 to daughter proof in April 2017



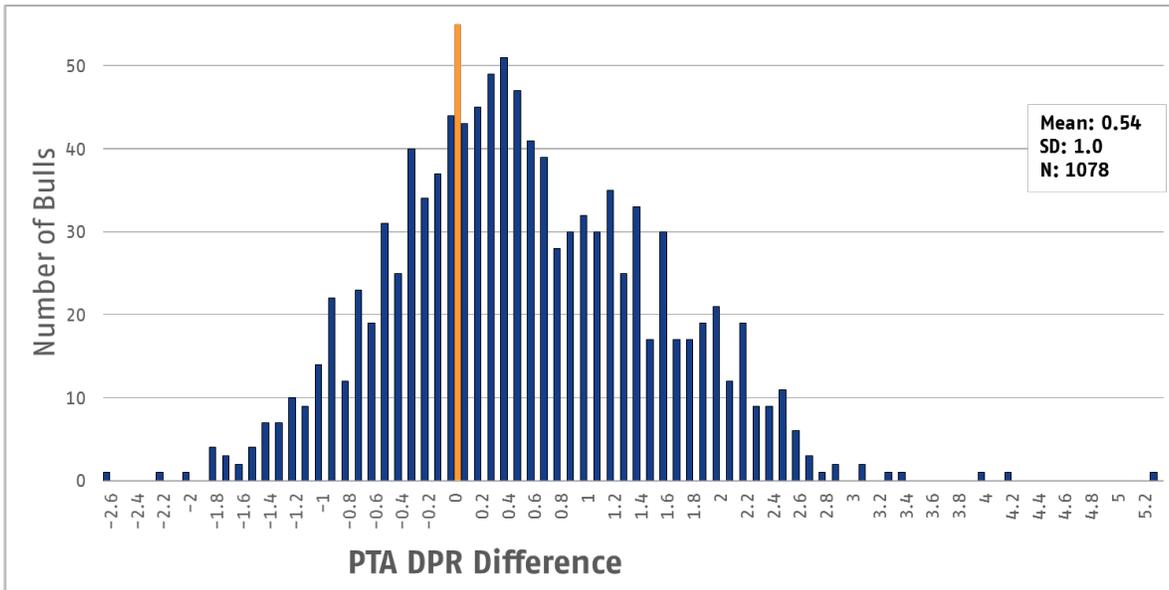
## Graph 8.

Histogram of difference in PTA SCS from genomic release in 2013 to daughter proof in April 2017



## Graph 9.

Histogram of difference in PTA DPR from genomic release in 2013 to daughter proof in April 2017



## Graph 10.

Histogram of difference in PTAT from genomic release in 2013 to daughter proof in April 2017

