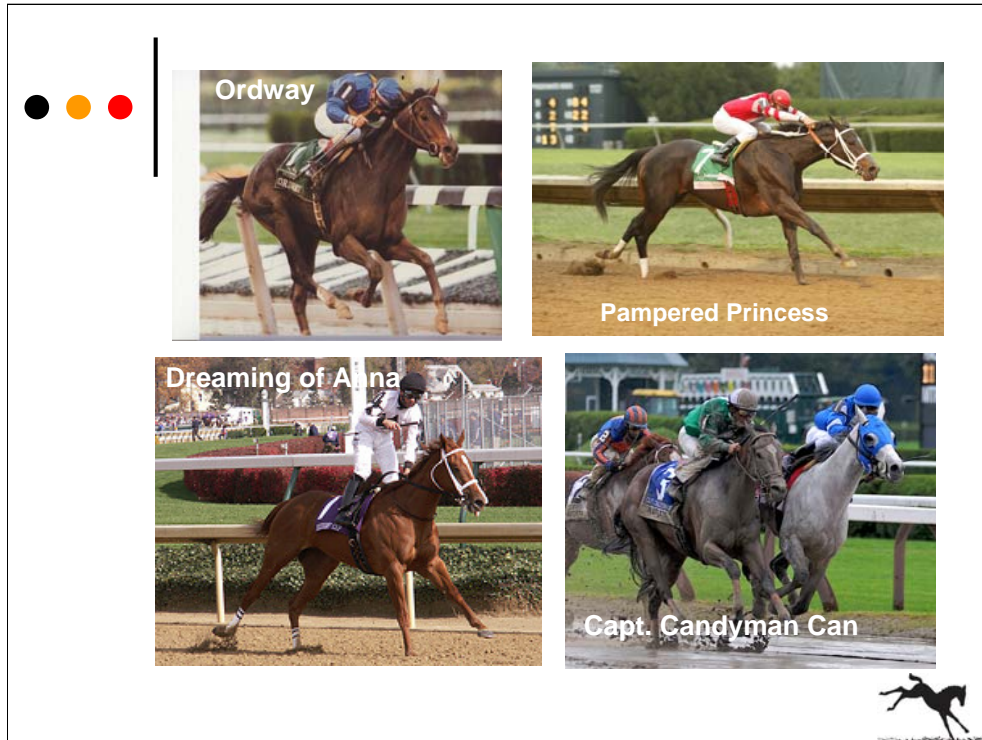


Pedigrees: A Practical Approach

TOBA Pedigree & Conformation Clinic
Saratoga Springs, NY
Suzi Shoemaker, Lantern Hill Farm



Welcome to Saratoga and TOBA's pedigree clinic. I'm Suzi Shoemaker, of Lantern Hill Farm in Midway, KY.

This morning I'll discuss current thoroughbred breeding trends and encourage you to use practical horsemanship in your pedigree evaluations for breeding or buying thoroughbreds.

I've been privileged to make my living breeding and selling racing thoroughbreds since graduating college and moving to KY from upstate NY in 1978.

Along the way I've bred, raised or sold the likes of Eclipse Champion Dreaming of Anna, as well as Grade 1 winners Capt. Candyman Can, Pampered Princess and Ordway.



Hepburn and HER SMILE (G-1) in 2008



I've also been fortunate to care for horses for some of the country's leading race horse breeders, and benefitted from living with their mares and foals and seeing diverse breeding philosophies put to the test.

The best recent example of that is Mr. William Backer's mating of Include to Capote's daughter Hepburn which produced 2011 Grade 1 Prioress Stakes winner Her Smile.

And while money from horses I bred and sold funded the purchase of two farms, I now have the great fortune to race some home-breds and find out first hand how certain traits fall out of pedigrees onto the race track.



Variability is decreasing in our gene pools

Worldwide dominance of Northern Dancer-Mr. Prospector cross

Increased book sizes for small number of Kentucky stallions

Few new imports of outcross sires



Speaking from that perspective, I'd like to share three observations about today's pedigrees that might help you succeed at the track or the sales.

The first of these is the declining variability in the American racing gene pool, because of three factors—

First, the worldwide success of the Northern Dancer-Mr. Prospector cross

Secondly, fewer stallions are breeding larger numbers of mares in Kentucky

and

Finally, imports of international outcross sires such as Nasrullah, Ribot, Blushing Groom, and Caro occur less frequently today than in the mid 20th century.



Top Ten Sires by Progeny Earnings in North America in 1978

Sire	Male Line
Exclusive Native	Native Dancer
Dr. Fager	Plaudit
*Grey Dawn II	Bosworth
Hoist the Flag	Ribot
Never Bend	Nasrullah
Northern Dancer	Nearctic
Cyane	Turn-to
Nodouble	Noholme II
Raise A Native	Native Dancer
*Herbager	Bosworth



A look back thirty years ago shows this. As you can see, In 1978 the top ten sires by progeny earnings came from 8 distinctly different sire lines.



Top Ten Sires by Progeny Earnings in North America in 2008

Sire	Male Line
Smart Strike	Native Dancer
Giant's Causeway	Nearctic
Tiznow	Intentionally
Kingmambo	Native Dancer
Elusive Quality	Native Dancer
Distorted Humor	Native Dancer
AP Indy	Boldnesian
Tale of the Cat	Nearctic
Stormy Atlantic	Nearctic
Unbridled's Song	Native Dancer



But in 2010 the leading sire list shows only two stallions descended from tail male stallions other than Northern Dancer's sire line Nearctic or Mr. Prospector's sire line Native Dancer.

Racing's golden cross of Northern Dancer and Mr. Prospector completely dominate our pedigrees today.

Not only are the diverse sire lines of 1978 a faint memory, we now see that some of our leading race horses come from multiple pedigree crosses—or inbreeding--to Northern Dancer and Mr. P.



What is inbreeding or linebreeding

Inbreeding is the term used to describe matings in which the same ancestor appears two or more times within the first four generations of the pedigree.

Linebreeding is the mildest form of inbreeding.



**There is no precise definition of linebreeding, but
Some people say when a cross works, it is linebred.
When it fails, it is inbred.**



Northern Dancer



Let's talk about ND, who went to stud in 1965 at Windfields Farm in Canada, and is without a doubt the most influential thoroughbred stallion of the 20th century.

Through such sons as Danzig, Nijinsky, Vice Regent, Sadler's Wells, and Storm Bird, (sire of Storm Cat), close to 75 per cent of the world's thoroughbreds have Northern Dancer blood in their lineage.

Successful Inbreeding to Northern Dancer first became popular in Europe in the mid 1980s, and is now an accepted pedigree pattern worldwide.

Almost 40 per cent of today's top stakes winners are inbred with Northern Dancer blood on both the dam's and the sire's side.



Mr. Prospector



No less a sire sensation was the brilliantly fast but unsound Mr. Prospector, who didn't run in Secretariat's Kentucky Derby because he had ankle chips.

Earlier that year, in his third start, he set a six-furlong track record of 1:07 and 4/5 that stood until 1989.

He entered stud in Florida in 1976 before moving to Claiborne Farm in Kentucky in 1982.

The influence of his stallion sons Fappiano, Forty Niner, Seeking the Gold, Gone West, Kingmambo and Smart Strike dominate racing today, especially in America.

Mr. Prospector eventually sired 181 stakes winners from nearly 1200 foals, for a rate of over 15% stakes winners to foals, 16 champions, and 47 Grade 1 winners.



Some Grade I winners Inbred to Mr. Prospector

Flower Alley 3Sx3D
Pleasant Home 2Sx4D
Strategic Maneuver 3Sx3D
Roman Ruler 2Sx4D
El Corredor 3Sx4D
Tapit 3Sx4D
Volponi 3Sx4D
WhyWhyWhy 3Sx4D
Declan's Moon 3Sx4D
Shadow Cast 2Sx4D




In spite of his ability to pass on his brilliant speed, the soundness issues that dogged the Mr. Prospector line kept most breeders from inbreeding to him long after Northern Dancer inbreeding was a proven success.

That held true until about 15 years ago, when some of our most successful race horses started to come from just such inbreeding:

Active Kentucky Stallions and Average Book Size		
	1991	2010
Active Stallions	499	282
Average Book Size	29	60

Source: *The Jockey Club*



So, we have these two **great** stallions, and they are made even **more** influential by the fact that when their sons and daughters are crossed, we get **even more great race horses**.

The Kentucky breeding sheds are now **loaded** with their blood, but wait: it gets better.

Improved veterinary technology makes it possible for a single stallion to cover many more mares successfully in a single year.

Now instead of just **30 or 40** mares bred in a single season, as was common in 1978, most of the popular KY stallions will breed between **100 and 200**.

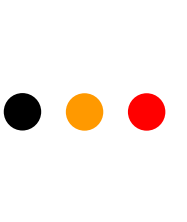
As you can see, In 1991 there were nearly 500 stallions standing at stud in Kentucky, with the average stallion breeding just 29 mares.

By last year, 44 percent fewer stallions were covering twice as many mares

In **2010**, Giant's Causeway bred **217** mares.


As the stallion population becomes less varied, of course so too does the mare population.

Now as I plan crosses for our mares, those hardest to mate already have the cross of Northern Dancer and Mr. Prospector. Some of them already have **two** crosses.



Outcrosses are good

An outcrossed pedigree is one in which no ancestor is duplicated within four or more generations.



Which brings me to my next point:

Outcrosses—defined as a pedigree within which no ancestor is duplicated within four or more generations----are good.

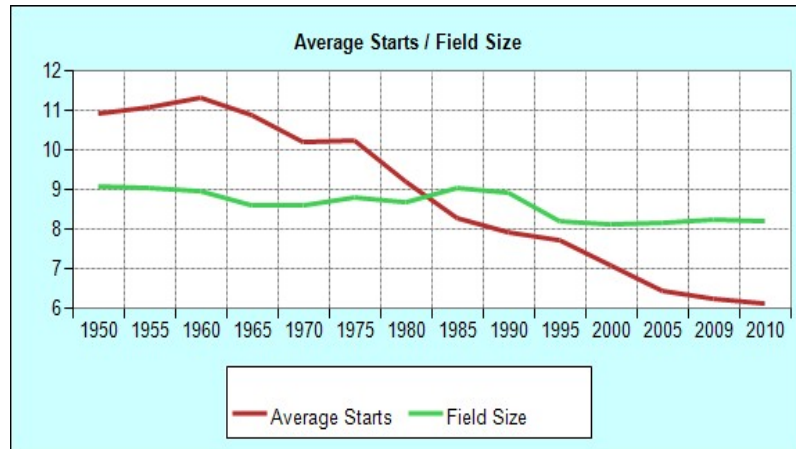
As you may know, too many shared relatives in any breeding population can lead to the expression of undesirable traits in the offspring.

As we lose genetic variability, we also lose soundness: of bone, muscle, temperament and immune systems.

While factors such as track surface, drugs, and year round racing undoubtedly contribute to the diminished soundness of the breed, be aware that closer and closer inbreeding of these two sire lines contributes as much or more than all of them



Average Career Starts of the American Race Horse 1950-2010



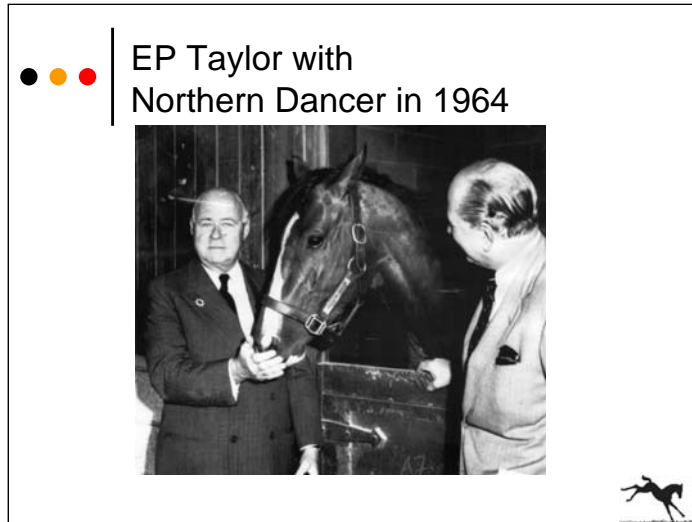
Source: *The Jockey Club*



This graph from the Jockey Club shows the much lamented decline of career starts per horse from 1950 to the present day.

The red line shows about 11 career starts for the average American Race Horse In 1950,

Decreasing steadily and dramatically after 1975, to just above six career starts in 2010.



So, when I go to the sale, or shop for a stallion, I am usually looking for an outcross.

I mentioned earlier that few stallion farms today bring bloodlines from other countries, as was common practice last century,

by such great North American breeders as EP Taylor, John Gaines, Leslie Combs, Bull Hancock and John Galbreath.

Partly, this is a result of the demise of the large private racing stables which sustained the racing programs to prove these stallions' progeny on the track.

And the shift to commercial yearling production in the eighties and onward means many horses are produced by breeders with no intention of racing them.

Of course, the pedigrees that sell best today on our shores have American dirt speed, not European turf performance.

All major racing in other parts of the world is run on turf, and the American preference for dirt pedigrees makes it nearly impossible to fill the books of imported turf stallions when 100 or more mares are needed per year.

The expense of buying and standing these sires just do not justify importation of new bloodlines for most farms.

But just keep in mind that the greatest stallion of all time, Northern Dancer, would never have set foot in North America if EP Taylor

had not purchased Nearctic's dam Lady Angela in England and imported her to Canada in 1953.



Successful Outcross Stallions



In the meantime, other parts of the US have given us some emerging outcross lines.

California racing and breeding have produced two of our most exciting young outcross sires, Tiznow and Indian Charlie.

(whose sire In Excess was an Irish import to California)

Other lines poised for a return to prominence are Nasrullah through AP Indy, (think Pulpit and Tapit), Hail to Reason through Dynaformer, More than Ready, and Arch, Plaudit through Holy Bull's sons Macho Again and Flashy Bull, And Colin through Include.

Princess Pampered Here

2005 Juddmonte Spillater States (G1) winner **PAMPERED PRINCESS** (Indian Charlie-Crafty Ember, by Crafty Prospector) was mated, foaled and sold by Lantern Hill Farm LLC.

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Plan Your Matings

- o Define Goals
- o Research crosses
- o Consider racing ability temperament conformation
- o Price

Speaking of Indian Charlie, let me describe how the mating for his first G1 SW **Pampered Princess** was done.

In planning any mating, the first step is to define the mare owners' goals.

Start by asking these questions about the foal:

Do I plan to **sell** or **race**?

If I'm breeding to **sell**, **where** is my market, and **Who** is my buyer?

If I'm breeding to **race**, will it be dirt or turf, sprints or routes, state-bred or worldwide?

In general, it is wise to breed like to like, for example, avoid mixing American dirt speed on a European turf pedigree.

I should add that In these times, anyone breeding exclusively for sale will find it tough going, and I advise all breeders to be prepared to race the horses they produce.

But for this mating planned back in 2000, my clients' goal was to sell a foal or yearling in Kentucky


which would return a profit to them

and go on to be a great race horse,

thereby increasing the value of their mare.

Isn't this the goal of every mating?


And of course it is **easy** to do.



Crafty Ember 1987

39-10-7-6-\$133,835 SW

	Mr. Prospector	Raise A Native
Crafty Prospector	Real Crafty Lady	Gold Digger
	*Gallant Man	In Reality
Autumn Ember	Little Norther	Princess Roycraft
		*Migoli
		*Majdeh
		Crozier
		Perfect Gem



Crafty Ember was a daughter of Crafty Prospector that won the Wintergreen Stakes at a mile and a sixteenth at age five, and about \$134,000.

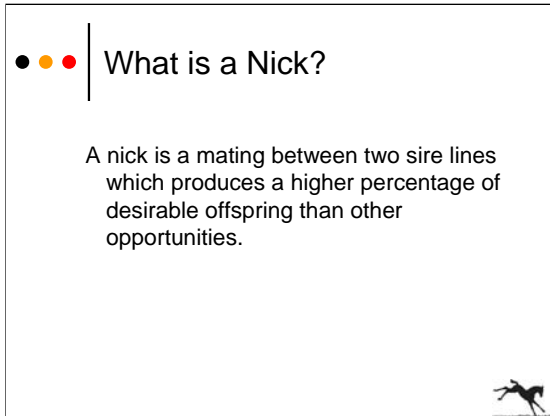
She was sound and durable...a winner at two, she raced every year, sometimes for as little a \$10,000 tag, but she usually brought home a check, and she got better with age.

Breeders call this kind of mare “hard knocking,” and I have a lot of respect for this type, because they are usually genuine and can add soundness to a mating.

As far as conformation, she was strongly made, with a big shoulder and hip, but a bit flat in the knee and toed out. .

Our clients wanted to spend up to \$10,000 on the stud fee.

As a starting point, I consulted *The Blood Horse* book **Nicks** to determine the crosses that worked best on Crafty Prospector mares.



What is a Nick?

I like to think of a nick as “the whole is greater than the sum of its parts.”

The aforementioned Northern Dancer-Mr. Prospector cross is the most famous modern nick.

But in the sixties and early seventies, one of the best known nicks was the one that produced Secretariat:

Bold Ruler on Princequillo daughters

Claiborne Farm established the Nasrullah-Princequillo nick as the most dominant of its day largely because both stallions stood at the farm

and the sons and daughters of these sires had ample opportunity to be crossed on one another.


Furthermore, most of the stock produced at Claiborne then went directly into racing,

and so the cross enjoyed ample opportunity for greatness.

However, a closer look at the numbers around 1973 show that Bold Ruler’s percentage of SW when bred to Princequillo mares was actually less than his percentage of stakes winners when those mares went to other sires.

So the perception of this nick was not borne out by the numbers....but when a cross produces a triple crown winner like Secretariat, perception IS reality.

	Indian Charlie 1995	
	5-4-0-1, \$616,120 G1 SW	
	Siberian Express	Caro
In Excess (Ire)	Kantado	Indian Call
		Saulingo
		Vi
	Leo Castelli	Sovereign Dancer
Soviet Sojourn	Political Parfait	Suspicious Native
		Diplomat Way
		Peach Butter



But back to Crafty Ember, who already had four foals from the Storm Bird sire line,

so the “Golden Cross” of Northern Dancer on Mr. Prospector. was in the pipeline

It was time to try something new on this mare, in case that cross didn't work

Matings are like driving down the road blindfolded, since we plan subsequent crosses without knowing the success of our first trials.

The Nicks book showed that Crafty Prospector seemed to have an affinity for the California sire In Excess:

From 4 foals of racing age, 3 were runners, 3 winners and 2 were stakes winners.

Indian Charlie, a son of In Excess, had just begun his stallion career at Vinery in Kentucky for a fee of \$10,000.

As a racehorse, he won his first and only start at 2 by 12 lengths

and was undefeated in his next 3 California starts, taking the G-1 Santa Anita Derby by 2 ½ Lengths over Real Quiet.

Indian Charlie's brief racing career ended after he ran a game third later that year in Real Quiet's Kentucky Derby,

Retiring because of a pulled suspensory.

But it looked like Indian Charlie could put some speed into Crafty Ember, and her soundness should be an asset to the foal.

As for conformation, the mare needed some size and bone and Indian Charlie had plenty of that.

The planets were in alignment: race record, conformation, “nicks”, and the was price of the season was right.

And we were rewarded with a big, good looking filly which sold as a weanling for for \$50,000 at Keeneland November Sale,

and later went on to win over \$786,000 on the track, including the G-1 Juddmonte Spinster Stakes at Keeneland, for her very patient owner Martin Cherry.

Great story, right?

Unfortunately, two full brothers to Pampered Princess have failed to make any impact on the track.

So much for science!



the best matings are
not planned in front of
a computer.



But this brings me to my third point, which is that the best matings are not planned in front of a computer.

You might think from my success with “nicking ” in this example that I am a huge fan of such data.

In fact, it is just one factor in a complex decision making process.

Now that we all have computers and internet access, just about everyone planning matings

or buying thoroughbreds is running a free report called True Nicks, or another product called a Werk Nick Rating

With True Nicks you have the opportunity to see how often certain crosses have been tried, and make your own decisions by looking at the number of trials—or opportunity

You can also make your own decision as to the validity of the letter grade, **as well as judging the quality of the racehorses that make up the grade.**

Used as just a starting point in your breeding or buying decision, these ratings can be useful tools.



What's in a Grade?

- **A to A++ : 13% of the entire Thoroughbred population earn A ratings while 37% of stakes winners rate an A.**
- **B or better (B to A++) : represent just 30% of the entire population, yet 77% of stakes winners rate B or better.**
- **C to F : 44% of thoroughbreds rate here and only two in 25 stakes winners (8%) have these lower ratings.**



As the True Nicks rating draws on the entire data base of the Jockey Club and is updated in real time, it is one of the best tools available to pedigree addicts.

But we all need to keep in mind these updates make historical reference difficult as the grades change with success.

Stallion owners also pay for the True Nicks subscriptions, and they are used as a powerful marketing tool to sell seasons.


Presently True Nicks only uses tail male stallion data to compile its ratings, but a **new product being launched this fall tentatively named 'Positive Ancestors'**

will include ratings based on the position of individuals in pedigrees---including mares.

Recent Grade 1 Winners and their TrueNick Ratings

- **Goldikova** – “D”
- **Her Smile** – “D”
- **Sassy Lady** – “D”
- **Game on Dude** – “D”
- **Acclamation** – “D”

“Paper does not run very fast.”



We have long needed such a tool.

But the danger to our bloodstock from the apparent ease of this rating system is great if we don't use the criteria

of skilled individual pedigree analysis, and a horseman's eye for conformation and racing ability in planning the mating.

To quote True Nicks cofounder Byron Rogers, “Paper does not run very fast.”

I now face problems with clients who will only consider matings which rate an A or better. Not only is this short sighted—as we will never discover new nicks if no one tries anything new—

it is probably only about 10 or 20 percent of the overall evidence needed to make a good decision

If you found the perfect mating for a mare on conformation, stud fee, and your own racing goals, would you discard it because of a poor nick rating?

Many people would.

But we wouldn't have these current Grade 1 stakes winners if we let one piece of data override all the others.

About 20% of the North American foal crop is rated a “D” with TrueNicks (~6,000). For every 100 horses that are rated a “D” at birth, just half of 1% of these go on to win a graded stakes race compared to 2% of the general population and 4% for foals that are rated “A” at birth.



So let's not forget the horses themselves when looking at potential crosses, The best place to learn about pedigrees is around the barns, at the track and in the sales ring.

I know you'll have a chance to do that later today as you look at yearling conformation with professionals.

But we all see different patterns in performance, pedigrees and conformation.

So watch horses every chance you can, and then correlate the pedigrees at the track or in your sales catalogue

with your own observations

You will start to build you own mental images of the various sire lines.

Just like going to a family reunion, you start to recognize the strengths and weaknesses of various lines.

For example, what is a

Storm Cat hip ?

Storm Cat knees?

What do AP Indy feet look like?

What is an Alydar head?

Is Roberto bone heavy or just right?

This will make your choices more meaningful to you as you buy, breed, or race in this endlessly fascinating sport.

I'd also like to add that If you don't have the **opportunity** to do this, find someone to help you

who isn't trying to sell you a stallion season or a horse.

It is worth it to pay for impartial advice if you can find such a person.

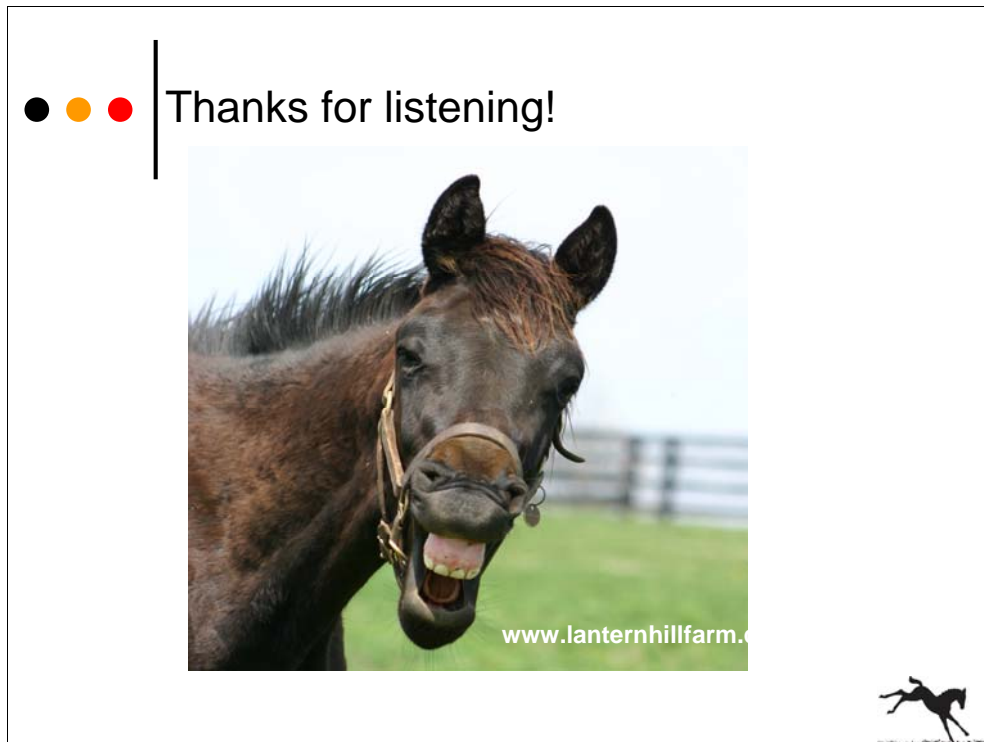


Useful Online Resources

Pedigree Online Database	www.pedigreequery.com/
True Nicks	www.truenicks.com/
Werk Nick Ratings	www.werkhorse.com/
CompuSire	www.compusire.com/
Grade I Goldmine	www.g1goldmine.com/
EquineLine	www.equineline.com/
Equibase	www.equibase.com/
Bloodstock Research	www.brisnet.com/
Racing Update	www.thoroughbreddailynews.com/
Racing Post	www.racingpost.com/
The Blood Horse	www.bloodhorse.com/
Thoroughbred Times	www.thoroughbredtimes.com/
Keeneland	www.keeneland.com/
Fasig Tipton	www.fasigtipton.com/
Tattersalls (England)	www.tattersalls.com/

These are some pedigree resources I use, they are invaluable and always improving my ability to make good decisions.

This is in your handout.



So to summarize,

We all have a chance to discover the next golden cross ,

as our pedigrees are being rewritten every time a starting gate opens

Seek outcrosses,

Analyze newly available pedigree data using the latest tools,

but don't forget horsemanship in your planning.

If you become a student of the horse,

he will lead you to your goals.