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Bridging the Horseracing-Academic Divide

MODERATOR/SPEAKER:
Steve Koch: Executive Director NTRA Safety & Integrity Alliance

SPEAKERS:
Dr. Ann Gillette: Professor of Finance and Economics, Kennesaw State University
Dr. Marshall Gramm: Associate Professor and Chair, Department of Economics, Rhodes College
Dr. Mick Peterson: Mechanical Engineering Professor, University of Maine

Ms. Liz Bracken: Alright.

Thanks for staying with us through our quick turnaround.

We want to keep going cuz we're running a little late, but we think this is gonna be a really, really great panel for you guys.

It's called Bridging the Horseracing Academic Divide, sponsored by AmTote International.

I'll introduce your moderator, Steve Koch, who is the executive director of the NTRA Safety and Integrity Alliance.

Mr. Steve Koch: Alright. Well, good afternoon, and thanks for having us today.

As many of you will remember, one year ago today I was very privileged to take this actual stage in a panel that was called 45 Ideas in 45 Minutes.

For those of you that weren't fortunate enough to be here, the concept of this panel was that five participants would each be allotted one minute to sell a new idea for the benefit and the improvement of the horse racing industry. We each took our turn in rotation until we had proposed nine new ideas for a total of 45 thought provoking moments.

Today I think it's time to put my money where my mouth is sort of on one of those nine ideas.

This year was my fourth idea last year of my nine out of that 45.

What I said to the room was that our industry correctly emphasizes research into the areas of health and safety for the horses and the human participants.

We've got some important initiatives.

We have the Racing Medication and Testing Consortium, a very important initiative, the Grayson-Jockey Club Research Foundation.

There's Mick Peterson, Racing Surfaces Testing Laboratory, ASTM for helmet and equipment testing standards, and so many more.

I went on to say that I really think we're skipping a pretty critical pillar for the best future of horse racing. I charged that we're shorting our investment in industry business and economics research.

I therefore proposed that the industry needs to support a business and economics conference where we provide a forum for the exchange of research ideas, and we provide a stage to distribute those ideas and their findings.

Then I concluded with that first things first, we've gotta pave that road with data.

We have to give access.

Our academics need steady centralized access to our data.

If we give them that data they'll really deliver some wonderful things for us.

I think that proposal last year pretty much put the ball in my hands to take the first shot, which brings us exactly to here today.

What we've done is we've assembled three of the brightest minds and highly passionate followers of the horseracing business for you on the stage.

Our mission is to introduce to you horseracing's decision makers.

There is a very eager population of business and econ researchers, and they're keen to really try to answer our most pressing questions.

Our panelists here are gonna review some of their own existing work.

They'll expose us to other pretty important initiatives that just might be critical to the future industry decision making.

Then by doing this today we'll be encouraging their continued efforts that really, frankly are all too often rewarded only as a labor of love.

Then ultimately, it's my hope that this discussion today is gonna highlight some opportunities to simplify access to, frankly, what I would describe as our hoards of industry data.

A real quick background to help you understand my own enthusiasm for this panel.

Part of my position at NTRA, I was at Woodbine Racetrack. A lot of you know I spent 12 years up there.

At Woodbine, like any racetrack, we had goldmines of data.

There's wagering data. There's pools data, horse supply data, race conditions data, ADW types of data, frankly endless goldmines of data just waiting to be mines.

Over my years at Woodbine we assembled some numerous data sets, and we delivered pretty critical decision making insights from what these frankly proprietary analyses.

Fortunately, in addition to our internal findings, we were fortunate to use some of our projects for public consumption.

What followed was a series of lectures both within the industry and at various academic venues.

Through all this we discovered that there is a surprisingly robust network of business, economics, financial analyst types really just waiting for their next score, next score being in the form of that so hard to obtain industry data.

I learned that, as I met more and more of these passionate people, if we would just turn them on to our data, turn them towards our most pressing questions, I know without a doubt that they can return us enormous dividends in the form of insight.

That's why I'm excited to introduce you today to three close friends of mine. Each of these guys has potential with our support, industry support, to really innovate on horseracing's most important issues.

We'll kick it off with Dr. Mick Peterson.

A lot of us already know Mick. He is himself a case study in the enormous benefits of bridging horseracing and academic.

The industry has learned amazing and important things about the dynamics of our racing surfaces through Mick's racing surfaces testing laboratory.

Mick has a doctorate in biomechanical engineering.

We're very excited that he's moving to the University of Kentucky in January to take over as director of the agricultural equine program.

Dr. Gillette holds a doctorate in economics.

She spent years with the federal reserve bank of Atlanta.

She spent some time as an economist for the Texas governor's office.

I met Ann while she was at the University of Louisville business program.

Nowadays she's continuing her interest at Kennesaw State University in Georgia.

Ann's an avid fan of horseracing, and she's been involved in numerous racehorse partnerships.

Then Dr. Gramm, last but not least, Marshall Gramm, a leader owner of racehorses.

If you could imagine having 150 horses in training, I would describe that as a very definition of passion.

A lot of you may be familiar with his racing partnership, Ten Strike Racing and Truxton Stables.

Marshall's a fanatical handicapper.

He's an annual qualifier for the NTRA's national handicapping championship.

In his spare time he's the chair of the economics department at Rhodes College in Tennessee.

For those of you that are intellectually inclined, I would urge you to sign up for his spring 2017 class offering Econ 265: Racetrack Wagering Markets.

I'm very proud of this panel that we've assembled today.

I think Ann, Mick, and Marshall are going to provoke some thought and discussion.

I anticipate that exposing this academic network to you really could prove to be an actual watershed moment towards horseracing's strong future.

The format we'll use today in the interest of managing our time, I propose that we give each of them their turn at the microphone to say what they've brought to us today.

Then perhaps at the end of that if we've managed our time well maybe we'll be able to handle a few questions from the audience.

If you agree to that, with that in mind, I would turn the podium over to Dr. Mick Peterson.

Dr. Mick Peterson: There wasn't much opposition to that approach.

As a true academic here I was invited to talk on one topic, but I'll talk on what I really want to talk about instead.

Bear with me.

I'm not yet the director of equine programs and professor of agricultural engineering at UK, but that will happen in January.

What I'm gonna start out with, though, is that there's a need to recognize that this isn't a new idea.

Putting this in historical perspective will help guide how we can move forward in this collaboration.

Higher education came from essentially four different sources in the United States.

The first one was the religious goals.

That's Harvard, Yale, you might have heard of them.

They all came out of a religious tradition.

There was industrial tradition.

There was the Rensselaer polytechnics.

MIT fell into that.

There were the teaching, or normal schools, which James Madison University, a lot of the state schools came out of that tradition.

The fourth one was the land grant universities.

The industrial and land grant universities were from the very beginning engaged.

What we're talking about here is engaging with the university on a topic that will affect industry and business.

Where'd this idea come from in the land grants?

If you set the stage, it happened in 1862.

It was after the Battle of Fort Sumter, before the Battle of Gettysburg, before the Confederates surrendered.

At that point, the western United States wasn't even settled. We were looking at territories.

It was before Home — the Homestead Act was about the same time where you got 160 acres if you worked the land for five years.

This is a very different world that they existed in at that point.

The farm economy in 1860 represented 58 percent of the labor force.

That was 15 million people out of 30 million were living on farms.

The farms were about 200 acres.

They'd just invented the mason jar, and they were switching over from hand preparing the soil to horses.

This is a very different world than we're looking at right now.

It wasn't like farming was part of the economy.

It was the economy, and 58 percent of the labor force was actually out in the farm.

Our hero of this story is Justin Smith Morrill. He's a nice New Englander, born in Vermont. He went to free public schools, which was pretty innovative.

There was a big discussion at that point whether public schools were gonna be free or whether they were gonna have, I think they called them charter schools — no, that was now.

He finished his schooling, and then he became a clerk, self-taught, moved to Portland, Maine, and then he went back to Stratford in Vermont, and he was town auditor.

Then he ended up in the House of Representatives and as a senator.

What he brought to the table was the Morrill.

He is the Morrill of the Morrill Land Grant Colleges Act.

It took two tries.

President Buchanan, who is kind of recognizable to some of us in his characteristics, vetoed it. It seemed like a waste of money.

Resubmitted his bill in 1861 and in 1862 they actually passed it. Listen to this and think about what the point was.

Without excluding other scientific and classical studies, and including military tactic to teach such branches of learning as they're related to agriculture and the mechanic arts in such manner as the legislator of the states may respectively prescribe, and urge, and promote the liberal and practical education of the industrial classes in the pursuit of life and professions.

You talk about the idea of higher education in the United States, and there's often the criticism that we've lost our way and that we've lost the whole liberal idea.

This was not a liberal idea.

This was preparing.

This was emphasizing our economy.

This was engaging. Agriculture extension followed.

The Hatch Act put agricultural experiment stations out.

This is 1887.

Now, by then we were beginning to move into the cities, but farming was getting a lot more sophisticated, and the Smith Weber Act in 1914 put people out to go visit the farms, to translate the knowledge that they were developing.

If you think about that, that is a very different approach.

What were we doing?

We were learning things.

We were teaching the students, but it wasn't just the students.

We had to have somebody who traveled out to the farms and engaged with the public.

Those were those little brochures, the talks.

Well, the world's changed a lot. It's a much more complex economy. Agriculture is much more complex.

Right now 2.6 percent of the labor force is on farms.

All those other people don't have jobs anymore on the farms.

They've got a different type of job.

You know what?

We're producing more and better, more nutritious food than we were when we created the land grant universities.

Land grant universities were a part of that higher education.

It was a huge investment at that point, 30,000 acres for every congressman and senator.

The next step in that was the modern research university.

This is the growth, if you look at 1963, we look at federal research funding, we look at the current 2014, this curve is — there's nothing else in our world that it has changed in that kind of investment.

If we look at what's happening in the modern research university, it's not a big part of the total U.S. budget.

Defense RND, non-defense RND, are these two little slices, this is what the federal budget looks like.

University budgets are a small portion of that.

That's about $29 billion a year out of that $146 billion.

What is it? It's an investment.

It's an investment in the long-term future.

The modern land grant universities, you'd recognize them.

If you look at the map here you can pick out.

They're the big universities in most states, Penn State, the University of Illinois, University of Kentucky, and the University of Maine.

These are the places where the research happens.

This is the translation of the research.

This is where most of the action happens.

Keep in mind, they're gonna be the best sources of science and engineering research, because that's their origins, especially that agriculture stuff.

Give you an idea of one of the universities that's kind of relevant here, the University of Kentucky.

Operating budget is $3.4 billion, but that includes 41 percent of that is the hospital.

If you look at it, the tuition — oops, it didn't go backwards.

You gotta do this backwards.

The tuition and the state appropriations are quite a small portion.

Government grants and contracts are as much as the state appropriations. If you look at where it's spent, it's spent on research.

Some of that money comes right in and goes out.

Then if you look at instruction, it looks like the state appropriations.

What's all the rest of it? Well, a lot of it at the University of Kentucky is hospital.

The other part of that is cooperative extension.

Let me give you a story about how we can translate this.

Mare reproductive loss syndrome represented a loss of 30 percent of the pregnant mares in Kentucky aborted their foals in 2001.

It was a $30 million loss to the industry.

It wasn't easy to find the answer.

Initially the link to the Eastern Tent Caterpillars was questioned.

If we talk about economic loss, a third of $1 billion in a state the size of Kentucky, that's huge.

Where do you go at that point? Who has the expertise?

It ended up that there were two teams of 15 scientists, including etymology, veterinary science, livestock disease, and animal sciences.

It turns out that the small hairs on the caterpillars' exoskeleton penetrated the intestine, and that was what was causing the abortions.

What'd we do?

Cut down some cherry trees, right?

That was the big answer on that — a lot of cherry trees.

I should correct that.

A lot of cherry trees were lost.

Think about this.

Let's step back.

Who are the heroes of this story?

It's an etymologist.

Etymologists are people who fall into the category of William — do you remember the William Proxmire discussion and his Golden Fleece awards he used to give out about academic research that didn't seem relevant?

Don't you think caterpillar research would've fallen into that category?

It would've been right there at the top.

What happened?

It represented a third of $1 billion to the state of Kentucky.

Etymology at the University of Kentucky is 18 faculty, because you need specialists.

You need somebody who understands the life cycle.

It takes a long-term commitment.

If we look at horseracing or the industry of horseracing, it's a relatively small business.

It's a relatively small niche agricultural product.

There's no center for disease control.

There's no federal highway traffic authority — transportation authority. Universities are these long-term investments.

It's got to be a relationship, a relationship that's built between the university and the industry to recognize what the goals are, and those goals need to be supported so that there can be an outcome.

Another success that I'll go through really quickly was when there was a recommendation out of the Welfare and Safety Summit on track surfaces, the racing surfaces laboratory was launched.

This was launched, a classic model for industry engagement by contributions from six entities.

Dan Fick, who's sitting back there, went door to door, built up the foundation for this financially to build it.

Now it's a fee-based 501C3 with about 40 tracks, 15 on a real regular basis.

Because of the structure of it, there's one full-time, three part-time employees, but there's also been two Ph.D. students who have graduated and three master's degrees.

It's about $300,000 in testing infrastructure that's in Orono, Maine, currently and moving to Lexington, Kentucky.

The way I want to launch this panel, the next step of this panel, is what's the next stage of this model?

What is the engaged university beyond this?

We have data.

We've got Equibase.

We've got the equine entry database, jockey rider injury database, the maintenance quality system, which is something that I've developed for the maintenance surface.

We have necropsy data.

We've got that list, and then we've got the betting information.

We've got the data.

The next step is prioritization.

How do we tie this back to evidence-based decision making, both on the more basic science side, but also how do we do this so that we get outcomes?

Now, this is a picture that I put up there just because I like to put up complicated pictures that nobody can follow over a short period of time.

If we look at it, even at the University of Kentucky, there's a budget of about $393 million per year, hundreds of faculties and researchers.

What's probably the biggest challenge with an industry is, what is the front door?

You're looking at the start here today of several of the colleagues on the panel are — the opportunity of a front door for the industry to how to discuss this, to work this together in such a way so that we have an ability to provide the support for the industry.

The idea here, land grant college, this mission, I wanted to review that history, because really this divide goes back to the very founding of the idea of higher education in the United States.

The last thing I'll do is show you a high speed video while they're transitioning.

Alright.

Thank you.

[Applause]

Dr. Ann Gillette: Oh, wow.

That's cool.

Alright, let me just wait until that's over.

Dr. Mick Peterson: We can give them permission now to switch away.

Dr. Marshall Gramm: It's not the whole race, is it?

Dr. Mick Peterson Ph.D.: No, it's not the whole race.

Dr. Ann Gillette: Okay, it's not going.

I just hit this, right?

Dr. Marshall Gramm: Yeah.

Dr. Mick Peterson: I think he has to bring it up.

Dr. Ann Gillette: Is it — okay?

Alright, thank you.

Alright, first of all, let me thank Steve for putting this panel discussion together.

I really appreciate his passion and his support for academic research.

He's done quite a bit and applied it to the industry.

Hopefully what my job here is to say what's sort of been done in the past, what we can hopefully do for you, and a good collaboration.

My first thing is just to get this out front is that probably what's the elephant in the room.

Many people, maybe not necessarily you guys, but think that economists in particular, we live in ivory towers.

My daughter would say true that.

At the end of the day, I think what we hopefully do with this panel is to let you know that we have relevant things that we can collaborate with you that will also move the industry forward in a very positive way.

Hopefully we'll dispel some of those impressions.

Alright.

Okay, where am I supposed to be pointing, or does it matter?

Oh, okay.

I was.

That is a green button.

Okay.

Alright, so what I want to — first of all, in general, through the talk, talk about some mutually beneficial low hanging fruit, and I want to do that really in maybe three different areas.

One is the economic equine studies that have been done historically in the past that really helped decision makers and regulatory bodies look at real time data on decisions, talk about available student resources that you may not have thought about that are eager and probably really good collaboration for the industry, and then ultimately come back to the ivory tower, some of the business research that's non-wagering, because that's gonna be Marshall's expertise, and he's going to address that.

Some applied equine studies, again, what is the purpose of this?

This is to really help stakeholders, decision holders, policy makers, get some real time data on some decisions that they need to make.

One of them of course is for governments — they want to know what are some rigorous studies that have been done that basically allow them to believe that horseracing is in their interest to support.

There has been some tax revenue studies that have been done by individuals.

In particular Walker and Jackson actually show that relative to other types of gambling alternatives that horseracing actually returns on terms of the state dollar with their data, more of a return.

That's important in terms of senators and people who are making these decisions that you can actually show this kind of data.

David Forest, O. David Gully, and Robert Simmons have also talked about different relationships between betting and lottery play, and particularly have shown as we all know that our handle gets competed away when there's more alternatives out there.

In fact, our bettors are actually very value sensitive, and particularly in terms of sports betting.

He calculates some elasticities using some data in Great Britain.

These are all studies that inform us of what are some of the effects of some of the things that are happening to our industry in an exogenous way?

There's also been quite a few economic impact studies, most of these done in the past.

Many of y'all know Richard Thalheimer, who unfortunately passed away last year.

He did many, many good studies for the industry with regards to state data, looking at the effect of casinos, and lotteries, and what implications did that have for handle.

Those are studies that could still be done with new types of gaming alternatives that are out in the marketplace.

I'm also involved, hopefully — I don't want to say hopefully.

I'm on the mark for an economic impact study in the state of Georgia in terms of talking about horseracing in Georgia.

That's something that I know a lot of states have been involved in and there's been studies in the past with regards to that in different states.

Some other applied research that's been done in recent is by Jill Stahl, University of Kentucky.

She's an economist, as well.

She's done a lot of putting together good surveys for the industry.

In particular she's done three for the American Horse Publication industry survey and also many of y'all are probably aware of the 2012 Kentucky Equine Survey.

She constructed that pretty much, and she analyzed the data, collected the data, and put together the report.

That's something that also has been used a lot within the state of Kentucky, this data, in terms of talking about the value of equine industry there.

Some on tap potential that I thought I might talk about is briefly that as an experimental economist myself, I see there's just rich collaboration with looking at experimenting with takeout rates, either individually at tracks or across the industry at large, and getting some elasticity studies with regards to changing in purse, takeout rates, and other competitive things that are happening to the industry.

Those are things that we can actually help you design and do and provide timely impact studies.

That's much more the applied work that's been done.

Now I briefly want to talk about the second leg, which is student involvement.

You may or may not be aware, and particularly for tracks that may not have large budgets, it's important to realize that there's a large set in the business schools of students looking for internships.

They get college credit for it, so a lot of them are just unpaid, or minimally paid, or underpaid.

A really good example of this is that Terri Burch in the University of Louisville equine department, and Jenny Rees were talking out at Churchill Downs one morning about Jenny Rees needs to have their web base redone, and applications that she wants to do.

They forged this agreement with the CIIS department that they can provide internship credit for students to go and work for them.

That turned out to be a very beneficial thing.

That's really available in most universities you can tap into at the business school level.

Also, senior and MBA class projects, it's a big thing.

Today business schools are being asked to be more relevant.

Imagine that.

We are, and we are trying to be.

I think we're always looking for good case studies.

My suggestion there is there are many opportunities available.

Marketing in particular does a lot of strategic analysis for a lot of companies today as a senior project.

That happened to be one of the MBA projects to evaluate what's going on at the Kentucky Horse Park.

Again, this is free type of information and studies that you guys can access by simply contacting deans and department chairmen at the business schools.

These are very rich sources of help if you guys would like to take advantage of it.

The other untapped potential that's a pet project of mine is student managed investment funds.

They're very, very popular around the country today. Students have been very, very successful with faculty help and monitoring, and also with the financial community to basically decide on what they want to invest in, do the analysis, make the trades, and then the returns go to different projects.

One I think that would be really useful to do for our industry is to basically have students manage this, and I'm trying to do at Kennesaw State University, get an endowment, manage it, and then the proceeds of what they earn from their portfolio would go to support charities in our industry, such as the Disabled Jockey Fund, permanent disabled jockey fund, Off Track After Care, and Backside Medical.

Also, at the University of Texas, they do this for tech stocks.

They provide a newsletter with regard to tech stocks trading and what's going on there.

We could do that for the equine industry.

We have lots of publicly traded companies.

That would also bring a lot more support and interest, I think, to our broader community.

The second one that I would suggest that is easy to do that we see in lots of industries, particularly certified financial analysts do this.

They have a national competition for investment teams every year — is to possibly support one for the entrepreneurship program and what is now called the innovation showcase here, which will be tomorrow, and have the students, the winners from these competitions come and compete here at a national, international level.

These are just I think very rich ways that we can bring together new leaders to our industry and also provide help in terms of those low budget things that we always don't have time and effort for.

The third pillar is basically returning back to the ivory tower and thinking about what is true academic research and how it can apply to the industry.

One of the important things that I began to look at, and I know Steve has looked at, and these other people here, and many people are very interested in looking into if we could get more data on a comprehensive machine readable format, is these breeder incentive programs.

Particularly, the question that these papers have addressed is: what's the best use of our pari-mutuel dollars to support breeders?

The breeding programs, as we know, have been around since 1962 with Maryland, and there are probably about 60 such out there today.

All of them have slightly nuanced differences with regards to how they're allocated, be it that it's purse distribution, or actual payouts to owners, breeders, or buyers, and stallions.

These individuals have looked at this question, and one of the things that they've been tossing around is what are the short run versus long run implications?

The long run implications are basically what are the distortions in the markets that are gonna arise because of these subsidies and the way that they are actually allocated?

The distortions in general could be in the first realm it takes two to three years to get horses bred and onto the track that people are receiving subsidies that haven't actually produced anything for the industry as of yet.

That's a question in terms of those dollars' best use.

Importantly, it could be how is the best way to allocate it so that you don't have prices going down in terms of horses and having too many horses of lower quality.

That is really kind of one of the long run impacts that I think the industry should be concerned with.

Some of the unanswered questions here are, again, these tradeoffs that are involved in that.

Steve Koch has done a really great study when he did his Woodbine 2011 study for the racetrack and looked also at the restricted and unrestricted races.

What he found, which is important, I think, to the industry which speak to it's important to think about what's the best way to allocate and support breeders, is to think about the — he calls it, I think, geniously, a return on entry, which is that it's actually better in terms of five percent return to have a state bred horse running in an open race instead of a restricted race in terms of the actual dollars that come in with handle.

Why is that the case?

Basically, bettors care about field size and they care about quality.

If you actually give bonuses based on actual winnings as opposed to restricted races, at least in the timeframe of his data, and at Woodbine, they would get a five percent return on that.

That's real economic impact in terms of thinking about how these breeder programs should be allocated.

There's also these interaction effects in terms of these breeder programs, which is to say are you gonna have a shift of your quality stallions moving from one state to the other?

The whole issue with California Chrome and state bred horses, all these come into play in terms of the owners' decision making with regards to where they stand their stallions.

Also, it's probably important with regards to the idea of the tradeoff and the simulcast space.

Where do you put your restricted races versus your unrestricted open races in terms of the card and what your other competitors are doing?

These are questions if we had a broader set of data that was very easy machine readable that we could just run these impact studies out on a much quicker order than having to spend a lot of time gathering that date.

I'm just putting a plug in for data there.

Another rich area that's been done, and there's a lot of data here, so it's not surprising what this slide is supposed to really to show you.

Many researchers have done research with regards to auctions.

The reason why that's been a fruitful area is not that it's any more interesting than any other area, but simply because the data is available.

They've looked at a lot of things such as the macro-economic variables and individual characteristics of the yearlings and how that drives prices, and questions of that nature.

Those have been very interesting areas.

The data's been available.

I want to switch gears a little bit and also just highlight that there's this idea in terms of the economic research that we have.

We don't have to just simply look in terms of what's available in our industry, but as all industries do, it's good to look at what's going on in other industries and with your competitors.

We call this in business economics, we call it benchmarking.

The classic example is there were two doctors, who went to the Indy 500, and they saw the Ferrari pit stop and how effective that crew is in terms of getting the cars off and back on the road.

What they realized is that they could take — they went down and interviewed them, and talked to them.

What is it?

How do y'all do it?

How are you so efficient?

When they found two primary things where one is that there's only one person who talks to the crew.

That's the leader.

Everyone else has a small job, and they only do their job, and they're responsible for that.

They implemented that at Ormond Street Hospital, which is a kids' hospital, there with surgeons.

They dramatically reduced the recovery rate time for their students and also the problems that had arisen.

It's really important to think about what's out in other industries.

Just to highlight some things is that the integrity is a big issue in our industry, and there is a lot of research that's being done among sports research as well as some other areas that have also looked at this.

I just wanted to highlight that there is an index for sport danger index with regards to different types of betting formats.

I'm not saying that we should use it or not, but it's important to realize that other industries are also gathering data on integrity issues and trying to formulate ways to think about it for decisions.

Some of the key characteristics here that they care about, if I can — detection difficultly, crime liquidity, live liquidity, money laundering difficulty, individual fraud likelihood, organized fraud likelihood, and severity.

They come up with this overall sports danger index with regards to allocating resources by their industry to watch these different venues.

It's much more how do we effectively allocate our dollars?

Where should we be allocating our dollars to get the best bang for the buck, to catch these people who are involved in fraudulent behavior?

Other areas that also speak to this are – there are models and data out there on deterrents.

There's many different industries such as an implemented zero tolerance and others that implemented progressive discipline.

There's data to suggest which of these two types of models actually deter behavior better and get better results.

Just highlighting that's out there, and also there are a lot of papers out on punishment for concealment and what's the optimum way that you should penalize people who are trying to conceal.

For example, if a jockey is using something to shock the horses and tosses it in the bush, what's an optimal way to actually deal with that?

There's a whole rich literature in this regard in terms of other industries that we might want to look at.

My last comment is that Warren Buffet, as we all know, is the most iconic investor in this century.

He wrote a book, as you may be aware, "Tap Dancing to Work."

There he talks about the statistical analysis that he does.

He works very hard.

He's passionate about what he does, and he loves it.

Every day he tap-danced to work.

Zenyatta is probably one of my all-time, if not my all-time favorite racehorse.

I just wanted to encourage all of us to maybe move in that direction and more statistical analysis in terms of the Buffet and Zenyatta style.

I'll turn this over to Marshall.

[Applause]

Dr. Marshall Gramm: Well, I'd like to thank Steve for inviting me to speak.

He somewhat overstated my credentials, especially as far as my horse ownership.

I only own about 80 racehorses, but I also own 40 Greyhounds.

I'm gonna be looking for Standardbreds and maybe start playing Jai Alai, as well, so I can cover all my bases for the industry.

What I'm going to talk about today is basically I'm gonna overview academic and economic research in horseracing.

Some of it is tangentially related to racing.

Then some of it is directly related.

I'm gonna talk a little bit about my own research, and then make a push for data and some things that would encourage other people to do more research on the subject.

I randomly got interested in horseracing in seventh grade.

I did not come from a racing family.

I went to college, went to graduate school, got my Ph.D. in economics, and was doing research on banking regulation, very dull stuff.

I got a job at Rhodes College, a little liberal arts college in Memphis, Tennessee.

I had a lot of flexibility as far as what I wanted to do my research on.

They wanted an active research agenda.

I realized I didn't want to spend the next 30 years researching banking.

I basically did a little bit of literature review.

I loved horseracing, was a huge fan, and wanted to see if there was any way for me to do research on horseracing and call it academic research, kind of combine my hobby with my job, and make the next 30 years of my research career more pleasurable.

What I found was there was a vast amount of research that was being done, especially in the area of efficient markets.

A lot of this, again, is using horseracing data especially to answer economic questions.

We'd rather have economics to answer horseracing industry questions, but this is somewhat of a start.

Betting markets themselves act as simple financial markets.

There are hundreds of races every day.

There's a starting point.

People make their bets.

Prices are established.

The race is run, and we have an outcome.

It makes a very simple financial market.

It's a vehicle for us to understand and look at price discovery.

Psychologist, economics, people in finance have done a lot of research on efficient markets.

This is a great way to test that.

We could also look at information, market size, and other factors that influence price discovery.

This goes all the way back to early studies from the 1060's.

What we find is it relates to horseracing data or betting market pari-mutuel data is that the public is very accurate.

An eight to one horse tends to win one ninth of the time.

A fair odd is an eight to one horse, takeout adjusted, tends to win one ninth of the time.

Now, there will be horses that are under bet and over bet relative to that price, but the public is very good.

That's the consistent theme in the literature.

The public, despite the vast amount of knowledge, differences in knowledge, differences in market participation, they are very good at discovering prices.

I remember reading the literature, being very excited. Well hey, I can do this kind of stuff.

I can look at it in terms of the simulcast year that we were entering.

I got my job in 2000, and was able to build a data set back when it was fairly easy to build data sets.

We could go scrape.

We went and we scraped TVG for data at night.

This is 2002, so we'd jump into the racing data that TVG had.

Two o'clock in the morning, we'd scrape the data and build a huge data set to look at market efficiency and pricing.

That's been the major focus of my research.

I've always focused on my research as sort of a horse player and applying those principles to economics.

Now, there are also these other areas of economics that horseracing has lent itself to, as well, the principle agent problem.

There have been some very good articles written about trainers who own their own horses versus trainers who train for other owners and solving the dilemma that they represent owners.

Are they doing things that are most cost effective and practical for their owners?

There's a lot of good discrimination articles.

Male and female jockeys compete against one another.

In fact, there's my econometrics final exam — so I teach econometrics.

I have them replicate a paper using more recent data on jockey discrimination.

Rank ordering probabilities, the simple question of if a horse is a — if we know the probability of a horse winning a race, what's the probability of that horse finishing second?

You'd be surprised.

This is a very complicated statistical question that there have been numerous articles about.

Risk and uncertainty, adverse selection — I know Steve has done some work on that.

In fact, I remember Steve's paper that he wrote as a master's student was one of the first ten papers I read when I got interested in this literature.

Then optimal investment strategies.

Now, what I think we want to do is to try to figure out a way to flip this into using economics to answer racetrack questions.

There's been less literature on this kind of stuff.

Obviously, the biggest question has been the question of takeout.

The literature on takeout goes back fairly far.

In the modern era, I don't think there's been a great study that has been done.

It's fraught with data problems.

Now, we have takeout changes, but the takeout is not consistent across participants.

There are different levels of participants, so people face different takeout rates.

It's hard to study the effect of Canterbury lowering the takeout when Canterbury didn't change their host fee.

For a certain population of bettors, there was no net effect of the Canterbury takeout change.

Then furthermore, we have the tricky problem measuring the fact that Canterbury's handle went up, but what's the benchmark?

What are we comparing it against?

I think that there are a lot of different ways maybe experimentally, like Ann talked, to look at takeout, maybe to get a little bit more of an impression of the population of bettors and an idea of what different bettors are paying to participate in racing.

In a broad sense, if we think about the racing's competitive circumstances, the takeout rates are problematically high, that there are certain bettors who don't even acknowledge racing as a sport where people can make money.

If a track has a 32 percent takeout, you're rarely gonna win if you go to the track.

How would you even think about participating when you can play a slot machine with 91, 92 percent return?

I think that takeout itself is such an interesting question and one that with data and industry input is one that could really be answered.

Here are some of the other questions that have been asked and looked at.

A lot of hedonic pricing of blood stock markets determining what factors influence the price of blood stock.

Fairly good stuff has been done on that.

Then some of the other stuff towards the end is the stuff that I'm looking at.

I'm gonna talk about three of my studies.

We think about takeout and how higher takeout's gonna lower the return for bettors.

I think it's important to remember that efficiency plays a role in this.

If I can go bet the races, and if I were betting against a population of completely uninformed players who are just betting random numbers, so if I could roll into a track, and every horse is gonna have the same odds, cuz people are betting random numbers, I'll take a 30 percent takeout.

Right?

Part of it relies on market efficiency and the informed betting population you face.

If I'm facing people who don't know anything, and they're betting random numbers, I'm not as worried about the takeout.

A higher takeout lowers return for everybody.

A more efficiently priced pool is gonna lower return for informed bettors.

One thing that we also need to look at is how efficient is the pool.

That in part is determined by how well the public is setting prices through the odds.

The one thing I've looked at, and I've thought about this a lot recently, because I love the pick five.

I played the pick five every day at Saratoga.

I play the pick five at Churchill.

I think it's a great wager.

I measure it in terms of its return against the parlay return, the parlay meaning if I could take those five horses that won, bet the first one to win, and then take the money, take the winnings from that and put it into the second horse, the third horse, the fourth horse, the fifth horse.

I get the parlay payout, and measure it against the pick five payout.

I think one interesting example of this was the force out of the two pick sixes on the Sunday after Thanksgiving.

There's one at Churchill and one at Gulfstream Park West.

Both were positive expectations plays.

As someone who loves to bet the horses, I live for days of positive expectations play.

At Gulfstream Park, there was $373,000 bet into $105,000 carryover for an 8.3 percent positive expected return.

You bet a dollar, your expected return is $1.08.

It's a great bet.

Churchill, $626,000 bet with $173,000 carryover, 12.7 percent expected return.

Both of these were great plays.

Now, Gulfstream, the wager paid $27,000 versus a $16,000 parlay. It paid only 1.67 times the parlay value.

That's less than your usual pick four parlay.

That was actually a very low parlay value.

It was not as good as your regular non-carryover pick six.

There were 15 winners of the Gulfstream Park West pick six.

Churchill, on the other hand, paid $117,000, 6.54, very good parlay return.

Only six people hit it.

I was five of six, very painful.

I was allowed a three horse in the last leg.

$20,000 would've been made my year.

Churchill – that was a very good return.

Again, post positive expectations play.

Gulfstream Park West turned out to be weak relative to your usual pick six, Churchill was very strong.

I monitored Churchill against Saratoga and their pick fives.

Saratoga has a 15 percent takeout on the pick five.

Churchill has a 22 percent takeout.

You would think, well, much rather play Saratoga.

Saratoga's was much more efficient. The parlay value was 2.47. It was a very tight window around that.

The highest parlay multiple was about five, so where the pick five played five times what the parlay value did, but it was fairly consistent between two and three usually, occasionally below one.

Churchill was a lot more inconsistent.

The average was higher at 2.86 times the multiple.

There were certain instances where it paid eight times the multiple.

Occasionally it paid below one.

There was a lot higher variance, but in general it was a better bet.

In terms of efficiency, in terms of the informed players, there was a much more informed players played Saratoga.

Better bettors were playing Saratoga, and that was driving down the parlay returns.

Saratoga had a much larger handle.

That could be part of it.

Larger handle, more active players.

Saratoga's handle was about ten times what Churchill was.

It was better, right.

Someone also thinking about efficiency, even though the takeout is lower at Saratoga, the Churchill one is very attractive to me.

I've done some research on moving from a dollar to a dime superfecta.

Hinsdale I think was the first track that introduced the dime superfecta.

I think it was 2003.

I know Sam Houston was the first Thoroughbred track to do it.

I was very excited when they did it.

I was like a kid in the candy store playing the — just the first night they had it I bet dimes all night.

The more I thought about it, the more I wondered if this made sense from an industry standpoint.

If we lower the denomination, if I went to the liquor store and they only sold beer by the cases, I'd buy a case of beer.

Now they're selling individuals.

Maybe instead of buying my case I buy one, two, or three.

Is it necessarily going to bump volume?

I found that overall it bumps volume.

It somewhat sharks the trifecta pool.

Somewhat tangential to this, when we went to dime supers it took away from the tri pool a little bit.

Overall, as a percentage of wagers, superfectas rose.

It was kind of at a bad time.

2007 is when the major tracks introduced superfectas, which is right during the recession, and the recession affected overall wagering.

It had another subtle effect. It also increased the efficiency of the pools.

In terms of the — in terms of the way I calculated the projected payout, they paid out less relative to what they should've.

That drop occurred distinctively.

I looked at two tracks.

I looked at Churchill, which made the change after the derby in 2007, and I looked at the NYRA tracks that made the change on September 30 of 2007 before and after.

Both Churchill and NYRA's dime supers were more efficient than their dollar supers.

Even though there was no takeout change that affected the payouts people were getting back.

If you look at it, there's been — Derby Lane, a dog track in Florida, recently had a two week experiment when they moved back to dollar supers.

I think what had happened is they'd had some — and I can't verify this.

I have one conclusive idea why they did this.

My sense is they had some on track players who made money with the dollar supers.

The dollar supers were less efficient.

They also got a couple payouts where they scooped the pool.

When the dimes came into existence, the pool became more efficient.

For them it affected their winning.

They went back to the dollars for two weeks and then went back to the dimes.

It was a sort of failed experiment, but it's hard to go back from being less efficient to more efficient.

We all talk about wanting to go back and bet during the 1950's and 1960's.

It's not gonna happen.

These pools are getting better.

They're getting priced better.

That's one thing I've been looking at and thinking about a lot recently.

I've also done research on late odds movements, which I think is interesting.

There's a while that a lot of bettors become concerned as they watch their horses go around their track.

They see a horse's odds drop from three to one, to two to one, to eight to five.

They become concerned about people betting into the pools after the race has started.

I found no evidence of that.

Late money represents 40 percent of the handle, typically, and it is accurate. It is informed insiders betting that are making the pools more efficient.

Money tends to move towards the most likely winner.

In fact, the one percent increase in the amount bet on a horse in the final pool versus post dime pool increases its net return by 0.27 cents.

That set is paradise.

That's holding everything else constant.

That's like holding the odds constant.

All this late money tends to move towards the horses that are most likely to win.

That's what we see on the odds board.

Those horses dropping, well they are the most likely to win anyway.

I had a much bigger data set with the Australian tab data.

I had similar findings.

That late money is informed.

I've done some age effect on Thoroughbred stuff.

The peak Thoroughbred age is 4.3 years.

Anyway, other projects I'm working on, determinance of betting market preferences, fold birth order. I do a lot of applied research now.

Applied research means I now own racehorses and bet on racehorses. My interests are what can improve my breeding? What can improve my horse buying?

A lot of my research I hope to move in that direction.

Part of my applied research is I had heard how easy it was to — for a while they say, well, ADWs are making all the money.

That's why everyone is losing, because it's going to ADW.

I started an ADW.

It was like setting money on fire.

I don't know.

I have a hard time believing all these ADWs are making a lot of money because, again, for me it was lighting money on fire, literally.

How can we promote additional research in racing?

The one thing I think is the availability of data.

Now, Equibase is great.

You have historical charts.

Think about baseball.

There's a huge literature on baseball, and there's been an explosion of research on baseball.

I can go and put together a data set in ten minutes taking minor league stats from the 1920's.

I can pull that data up.

We have many students who do research, senior research projects with baseball data because it's so easy to do.

For horseracing data, I can pull up a historical chart, but they're all in PDF form.

I can't put it in any workable form.

I can't pull up past performances.

In doing my full birth order stuff, I have the American produce records.

If I make too many entries it asks me to key in some number so it doesn't think I'm a robot.

All I want is I'd love to be able to just pull all that data and come up with my own statistics.

I love reading the Bloodhorse Market Watch.

They do great stuff, but I would love to be able to do the same things and do research on it.

I'm not asking to get paid.

I would like to do some of my own studies, or like to answer these birth order questions holding everything else constant, holding factors like sire quality constant.

I'm trying to figure out the optimal — the factors that affect two year old performance.

I'm working on a data set from the 2009 two year old sales, and I have to go and connect that to the APR.

It involves a lot of manual data entry.

I think that's where we lag behind the other sports.

A couple of general managers in basketball formed the Sloan Conference, which is a major conference on analytics for sports.

It's grown from 175 participants ten years ago to over 4,000.

Their approach to sports, to basketball and baseball especially, has been very innovative, very data driven.

A lot of the research is data driven.

A lot of the way that people discuss sports even in the media is very data driven.

In horseracing, we're that kind of sport.

We're a sport that I can be an active participant in.

As a seventh grader, I loved the idea that I could watch a baseball game on TV.

It has a lot of numbers, but effectively really boring.

Horseracing, I can be a participant by betting.

For that brief amount of time I own that horse.

There are a lot of people, whether they're academics, or whether they're handicappers, or whether they're breeders, or whether they're owners, that would love access to data, love to be able to participate, love to build their own models.

People email me all the time saying, "Hey, have you looked at this project? I want to put together a data set."

I said, "Well, get to manual entering."

I'd love the access that the baseball resources provide.

I know that would potentially be a financial hit for the Jockey Club, but free access to past performances, just the results — I know that there's value added by DRF and the other producers of past performances, but being able to get records and put them together in datasets, I think a lot can be done, and a lot could be done for free.

The other thing I would encourage is academic conferences. I met Ann at an academic conference.

The University of Louisville used to host one when I was first getting into this research area.

I went to a conference there that had 80 economists there.

Get this.

Most of them paid their own way.

We could host.

Someone could host an academic conference.

We get travel budgets.

Our schools encourage us to do research.

You have these people who want to come together to do research, to meet one another, and we could do it for almost nothing.

I would encourage some of the programs to look at this, to bring people together, even if they're doing projects just tangentially related to horseracing, even if they're doing gambling related stuff, or market efficiency stuff.

I think there's value in bringing them together.

For me, that conference was a pivotal moment for me.

I met some very important to me, very important people.

I met future co-authors.

It was at the University of Louisville.

They took me to Churchill Downs.

I saw Silver Charm at Lane's End.

Those are the two things I would push for, data.

Maybe we could have a spot at the Sloan Conference or there could be innovation in that direction.

Then bring researchers together.

Again, thank you for the opportunity to speak.

[Applause]

Mr. Steve Koch: I think that was a really interesting fantastic panel.

I hope that it's caused some questions out in the audience.

We've managed our time pretty well.

I was worried about that at the beginning, but I bet we can go for five minutes before Wendy Davis shuts us down.

If anybody has a question I'd encourage that.

Audience: I just actually have more of a statement than a question.

I noticed when Dr. Gillette was showing all of the research papers and stuff that was up there, very few of them had a published date of after 2010.

I was wondering if we'd entered a period of time where there weren't a whole lot of actual papers being written.

Dr. Marshall Gramm: As I move more to my applied research, before I got invited to speak, I looked at the academic research that had been done in the last five years since I've gotten a little bit out of touch.

It's actually gone the opposite direction.

There are some very high profile papers that have been written, especially in economics.

Our top journal is the American Economic Review, and there's a betting, theoretical betting market efficiency paper that was published in the AER in 2010.

Then there are some good papers that have been published in recent years related to principle aging problems, related to discrimination.

Dr. Ann Gillette: Most of that data is still related to auction data and the wagering data.

I think you're correct that a lot of these studies that have been done were proprietary data sets that were given to academics, the ones that I presented.

There is a lot of research that has been done, but again, primarily in those two areas, because the data is rich.

Dr. Mick Peterson: Well, and I think an element of that comes back to the financing of these different studies.

When they were more basic research, when they were using the betting market as a model for economic modeling and looking at that as an efficient market, there's data from the auctions that could be used for that, whereas the stuff, if you look where even economic impact studies are done, they're done — it's usually funded by at the state level, because that's where the money is available to fund that.

That's much more difficult to move forward.

I think what's interesting is if you look at those, there are very different pieces of this.

One's the basic research that's more on the science side.

There's a funding model that goes with that and a model.

I think what's most exciting about this third talk is there are people that are willing to do this free because of the potential value not only to academic research, but it also has value to the betting public and understanding.

The idea of having open data sets for the older data for some of these studies is huge opportunity.

Mr. Steve Koch: We appreciate your attention.

Thanks for sharing your hour with us.

Hopefully we drove home our point today.

There is a really robust body of analysis and researchers just dying to answer some questions for the industry.

Naturally, the most enthusiasm is going to be amongst our handicapping, wagering customers.

There are lots of them that can answer some racetrack operations types of questions and other industry operations type of questions and economic performance.

Thanks for your support.

Thanks for having us today.

Have a great afternoon.