

Thank you all for joining us. My name is Britt Lundgren I organize a series. I am a fellow of undergraduate education part of that education and human resources directorate at NSF. I would like to say about the deified seminar series, we have about six or seven different meetings per year. The data science seminar series present data science leaders from academia government and industry to discuss provocative topics related to big data and machine learning. I am excited to be hosting this talk which I believe is our first seminar series and the role of education. It is my pleasure to introduce our speaker Doctor Ed Bennett the senior director at the education advisory board which is a DC-based best practices for that devises more than 1000 colleges and universities in North America and Europe. Doctor Bennett come to the education sector from the field of evolutionary biology in which he holds a PhD from Duke University. His current research focuses on data analytics to transform data analytics advising. He led research to produce the best practices report called hardwiring student success, which profile testing case studies from exemplary institutions of higher education that invest in data-driven, early one strategies to identify students who are proactive follow up from support services. Doctor Bennett's latest work for the student retention which he will speak about today was recently highlighted in the inside higher Ed. Following Doctor Bennett's talk we will invite those of you who are attending both in person and on the web to participate in a fireside chat, metaphorically, which will be moderated by Doctor Ayman Kelly Goodstein revisor at NSF education and human resources director. At this time I will hand things over to Doctor Bennett

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Hello and welcome. I am glad to be here. This conversation came about because Britt and I together about student success. The issues we take on over at the advisory board, a DC native person and you let your for any amount of time you have probably heard about us we have a healthcare best practices for ad now have had an education practice over the last nine years. I was fortunate enough to be employee number eight after finishing grad school. Not seeing much of it a market in front of me for the dearest and evolutionary biology, it was going to be a hard road so I went corporate. Here I am back at NSF which is fun. I have spent the last seven or eight years really, basically since the beginning of time at the 88 working on student success. What I have found is I learned quite a bit about how good I had it in my educational career. I have never quite talked in front of an audience like this. I was trying to figure out how to start. One of the things I realize is you may not have a scope of the problem. If everyone would raise their hand in the air, quickly, everybody do it. If you went to undergrad outside of the United States put your hand down. If everybody with their hand in the air who went to undergrad in the United States. Your hand down if you went to a big public flagship school. Second picture hands -- your hand down if you went to an Ivy League or liberal arts college. Everyone who is left, you are basically the majority of the students in the United States. Disorder school that we went to the vast majority and I went to do twice, are not the source of schools we'll talk about today. They are basically relative when you talk about degree in the US. Directional Midwestern state universities are the most popular. Grand Valley State or whoever might be University of Central Oklahoma, these are the schools we're talking about now. The graduation rates at those are schools that the majority of the room went to, most students will graduate. Most students will graduate in four years, and when I say most 90% is typical. If you look at Carnegie Mellon Orphic force or University Michigan, you're easily talking about nine out of 10 students will start their will finish and finish in four years. Nationally speaking, the six-year graduation rate for full-time students due to start an institution full-time, taking 12 credits, and finish at that same institution within six years, is 53%. That is not good. That doesn't mean actually -- it doesn't actually capture what we're doing. If you start the college chapel time got you started part-time, you don't get counted as a statistic. And if you ever transfer, did anyone transfer? You never graduated according to the federal government. The federal government says if you didn't initially started, you do not count. If you transfer somewhere, you also are not counted in the statistic were only capturing about 60% of the students in higher Ed even with those metrics. And remember we are talking about six years, not even for your spin flagships -- we're talking about Berkeley's of the world, they are only getting four and half or five. The programs are more than 120 credits there is huge bureaucracy. Something went wrong. Whatever it might be. That has cost. This is a big issue is actually capturing a lot of national attention right now and it is issued, we call our clients members, they need to pay more attention for variety of reasons. It used to be a thing for by doing what to improve? Because it's the right thing. Students come to us we aren't educational facility and we need to graduate them. Now there is pressure from state legislature, federal government, parents, or concern about \$1 trillion in student debt, this is a meaningful amount for students were taking \$30,000 in loans and don't get the grace period most have involuntary breaks trying to find a job and about one third of the people say the college experience was worth it. We are in industry in crisis. At the same time you have a massive demographic shift going on

where the sort a student who came to college since World War II, is no longer the sort a student in college because those people had babies. Now if you look at where all of the population growth is in the United States, it is in lower income below \$60,000 per family, below 30,000 is where you see growth. These are students coming from backgrounds in which they have less financial resources, more susceptible for strain, something goes wrong you are out of school. The new cut from your budget is education instead of food. The students also come from lousy or high schools. And that SAT scores. This is a bad measure of intelligence but it is a good measure of preparation. Are you prepared? Are you ready for it? There is a 262 put difference in the average difference between higher and lower income brackets. Now you have a situation where the students entering higher education are less prepared, less financially well-off, and more likely to be first-generation. More likely to be different in kind in many different ways from what schools are used to dealing with.

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Is actually a bigger difference. No one has actually pointed that out. No one has ever pointed that out.

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We are already seeing this change. While this is all going on, there are now fewer students in many areas of the country, especially the rust belt, the Northeast, if you are remain right now do not take a job in Maine. They are freaking out because they have no students. Southern Florida, Texas, California has students got anywhere else in the country is flat or declining in student population. That is a huge problem. What happens is you can find a demographic shift with the fact that now the best schools are still desirable locations and they are eating everyone else's lunch, you saw a shift occurring in SAT scores public and private graduation rate about 80% have been getting better students based on their SAT scores in the last 10 years. Everyone else is getting worse. The trend has already been felt. Projections are this will continue to continue until 2022 or 2025. That's the background situation.

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Why are we talking about healthcare? There's another industry that is facing a rising demand with a fixed capacity for care. It is healthcare. Which is not to say that healthcare is anyway a model industry, there has been a lot of ink spilled about all that is wrong with it. But this is the basic problem. You've got an aging demography as baby boomers enter retirement and eventually old-age, they put a greater demand on the system. Yet we have a fixed amount of medical doctors while relatively fixed. Growing a little bit, but basically we are not increasing our production of doctors, nor should we because we want the best of the best, and it takes seven years to make a doctor if you consider four years of medical school +3 years. The shift is occurring and how do we get ready for it?

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There are creepy similarities in the way care is provided for students in higher education and care provided to us as human beings in the American medical system. Providers are optimized for throughput and data outcome. This is an important point. If you get sick and you go to the doctor they get paid. You go back with the same else desk same illness, they get paid again. They are optimized to thought the appointment calendar but not necessarily to fill their patients. The same sort of thing in higher education except higher accountability. How many advising appointments? Care is in person contact. You have to go to an advisory have to go to a doctor. The recipient is not trusted to give himself student self advisement is a dirty word. They may get it wrong. Problems are adjusted reactively and not proactively. We are not heading off students problems, they are manifesting and having at the moment. Same as healthcare, you wait to get sick you don't do preventative medicine necessarily. That is beginning to change. There is no record sharing in higher education within the same campus. Between people that sit next to each other even. Part of that is because they don't keep up with electronic records and they don't like the systems. Sales force is coming into higher education and revolutionizing it with our technologies.

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How has healthcare been dealing with their demographic shift? There's a lesson we can learn from this. Do you know what population management is before I start? I know this much. I spent a couple weeks last summer thing really scrubbed in on it. I got to feel I can get it -- and academic again. This is how they deal with capacity. They shipped the way to get compensated. No longer for the transaction, now they get compensated for the number -- this is a new term -- covered by how many lives this is hospital intersect. How many lives this is primary care physician intersect. The more you have to morning up a now your optimized to not go. Filippo, but for filling up your Rolodex patients. The more you can handle and

maintain outcomes, the better you are. How do you maintain outcomes if you provide in aggregate less who care to each person. The trick is to use analytics. And some other things. Let me walk you through this.

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There are a lot of ways to do this but most systems divided into three kinds of patients. Rising, high risk low risk. At each level they deal with the patient in different ways. Differentiated care. So for the highest risk patients, these people are very sick. They are in and out of hospitals on regular basis. We want to keep them out of the hospital whenever possible. We do that is to keep them at home and surround them with a care team. A relatively inexpensive care provider. Armistice, social workers, this will therapist and family. They are networked together into a system is quarterbacked by an experienced nurse or physician. The person or physician can extend their influence to a large number of patients using this agent system. And technology

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The lowest risk patients which is the best story of us, is to keep us out of the system entirely. Do you need an annual physical if there's nothing wrong with you? I went for one recently, it lasted six minutes. I timed it took it was six minutes. They went and bought me a couple times and reply, and I was out the door. There was nothing wrong with me. I did not need to be there. It was the first annual physical I had in five years. Don't even ask last time that I went to the dentist. We're looking at preventative measures and scalable measures. We are recent of eyes by our insurance company to walk up the stairs instead of taking the elevator. There are incentives for this. This comes from the insurance company who would rather we don't present a visit to a doctor. This is all part of the system to keep us out of it. Rising risk is the most interesting part of the population. These are folks who has something wrong with them but not today. A diabetic dolls into this category. Given identifiable condition, but if we catch it early we can keep you from escalating to the top of the pyramid where you become a problem for yourself and the system. This is the group which has a massive amount of data analytics applied to it. You hear about biodata used in fancy ways in hospitals, chances are it's in this tier. This is where close monitoring, a lot of analytics and essentially a lot of pills patient touches are occurring. Hospital saves easy to identify high-risk and low risk. The middle group is where they think they will make their money.

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The view Hospital sepsis in the place and is a decade-long shift occurring, they reported good results as far as reducing cost and care for patients. This is still very much emerging. There are few health systems that are complete, there are a few dabbling with it but it is moving. Everyone knows it's the right idea but they are free to be the first. -- But they are afraid to be the first. There are textbooks and textbooks written about this and I have missed some very important points for sure, however this is what we walk away with when we looked at this. We were looking to change universities and we wanted to plot the pieces we thought was important for schools. Recognizing there's a difference between someone not graduating and someone dying. The type of care that you are providing is also very different. We were just pulling the elements that we thought could the University -- can be helpful to universities there are four things. You need world-class intellect. You need to know who is at risk. You need to be able to build it. You need to be able to afford day care and have a care team and network them together. You need to have things you do for different levels. You need differentiated care you need ownership and accountability.

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With one exception, none of these things exist that universities. We have a little joke in the advisory board, hospitals is about five years behind industry novation and we got to the education sector we realized universities are 10 years behind hospitals. There is no reason to integrate. 50 years behind. [ Laughter ]

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Volume at[ Indiscernible - low volume ] Second schools like Arizona State are ahead of the curve. Georgia state also. But the run-of-the-mill University out there, doesn't have much motivation to change in this arena or much of the ability to change. Plus universities are fundamentally late. We have not been able to do things like --

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You have for campus University was 60,000 undergraduates not even counting the 150,000 to 200,000 graduate students, it's a crazy place. You cannot run the place without great record-keeping and strong leadership. Second very few schools are Arizona State in that regard.

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The University of Central Florida is moving that direction.

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We have been talking to our members, number we provide both research, which I would describe the corporate sense maybe not the research you do but what we do, we couple it with technology to enable this action and consulting because they don't know how to do some of the change management we bring the ideas based on the work we've done. With over 200 schools and we're trying to put this model in place at the schools. We are walking you through what we do with it. D panel X group is what people are quickly realizing and this is the key take away for the last five years people have been investing right here in this box, we're going to figure out who is at risk. They have been putting all their eggs there. There are some companies that are making some great money with really fancy pants coats. No one knows what to do with that information. You are at risk, what do I do?

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Steps two through four are most important. We are ahead of the curve and asked where we bring in our consulting and analysts. This is the care strategy. We have a predicted model, it's the red meat for you. Some kind of cool insight looking at the data from all the schools got everybody knows that future fail courses are doing something bad. We found that students who get these courses, are also a big time trouble. Look at what you have here, this is a real pile major at a real state university. These are the graduation rate for students in biology. Bio majors graduating biology based on their introductory course grades. It doesn't matter, just don't fail it. For precalculus getting a literacy is bad. An intro to bio even B is not great. Some courses students are passing But they don't get what they need out of it or there's an indication of danger ahead. This is especially true in sequence majors. But pretty every major -- pretty much every major has this even liberal arts. Sometimes there's been -- sometimes there is a weird link it's like math and music and history and everything. What we have found is a curve. This is idealized but we have our three risk categories we defined using academic data. As we begin to extract information from universities we realize there's only one data source for doing predictive modeling and it student transcript. You have it going back 10 years or more, you have for every student, you collect it from everybody, it's relatively clean, and it's relatively easy to get versus swipe cards and surveys, that's incredibly expensive for school to together. We have invested almost all of our eggs here in the student by demographic data on the state records. We will be adding and financial records as we go.

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Is in three tiers and the way we talked about a schools is you are already putting in a lot of effort into the high risk and low risk, high risk because their obvious that you don't need a model the tight with Iris. A low risk because they are actually asking for they are all over you, I want a double major, triple major, to study abroad, the ones who are sucking up a lot of advisor time because they are there having nonrequired conversations.

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Are analytics is not terribly sophisticated, but it is something that is good with the approach we're trying to take. We want the three levels. Horseshoes and hand grenades we have it right here.

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The care strategy is a little different than healthcare. We didn't build a pyramid, but a Mayan pyramid with steps. For every student you are preventative measures in place. Oftentimes you don't have a technological basis, we build that out as well. The idea is we want to be able to whenever possible just to distract themselves, or be directed without even being knowing they are being directed. This is to do the right thing. For the modern high-risk students, we had in a layer of proactive intervention. Schools are terrible about proactively reaching students who have obvious point sites. You can't do it for everyone becomes it becomes crazy expensive, but you can do it for some students and it is these two categories that were most interested in. And high school students, if you can surround them with care and you touch base with them weekly, they do better than their peers. It is great expensive to do, hard to get someone to do that day in and day out being paid 30,000 a year for this cohort of students that need a lot of help.

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I will walk you through each of these levels of our approach. You can see how it is built out. Stop me if you have questions.

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We are premised on the notion that everyone to get through who can't. Obviously there's some students who don't belong in college, but the old notion of if they drop out they didn't belong here in the first case, is demonstratively not true for most of the schools. There are students who are obviously not ready when they show up. Either emotionally or academically or financially. They are just not ready. It's a relatively small group, our data shows that it cannot be more than 20% of students at even the worst schools. A bigger chunk of students that are leaving, it's either that by thousand cuts or it's something not of the students fault or school negligence. There is a gray area there, but we still run into faculty members that say that.

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There are some who have figured this out. Keeping everybody in the tier for the long-term is interesting. Whether you keep them longer to graduate is to be seen.

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It's interesting, that's the approach that they universities run by NBA, -- MBA, that happens. In many schools you think six years because you drop the part-time any paper credit. The fees aside, the actual game for those students -- also opportunist get students are taking different classes. The economics don't work out perfectly. We have looked into it extensively. Schools are actually -- to their credit -- unwilling to go there. They want enrollment ending the -- they want enrollment.

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Most schools are not willing to take that step and say they are trying to suck as much money out of the school -- student as much as we can. They want to graduate the students.

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No one believes they will do what hundred percent graduation rate even at Harvard because they will have someone who transfers out or has a mental health break down and cannot finish whatever it might be. Most schools would love to be at 80%.

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Let me walk you through these. We start with the lowest risk, behavioral nudges. Schools need to spend the least amount of time and effort to get students to do the correct things. There have been some cool initiatives that are Naji -- that cannot students. University of Hawaii invention called 15 to finish, have you heard of this? It is a neat thing. They found in Hawaii, the majority of the full-time students were taking 12 credits. That became normal because it was what you are doing in your first term, it has now become a habit. Students not doing the math have realized that 12 times a semester's does equal 120, and they need that to graduate, they are starting off on the wrong foot and they extend their career a full year. When they realize this was an awareness problem, they launched a PR campaign. YouTube videos, print advertising, radio, all targeting parents and the students. If you take an extra year to graduate, it tossed you -- it costs you \$10,000 more, your opportunity costs have taken an extra year. These little to our three-minute videos have completely change the behavior in their first year students. Now they are up about 60% on the students taking 15 credits instead of 12. This is a movement that has shaping the nation about 10% of the schools have something in place now. Reading the graduation guarantees yesterday in the Buffalo which we don't believe are the best practice.

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Cleveland State is your urban typical part-time student college. Students opt in and out of school. They found students were not continuing from fall to spring in great numbers. Get the students to register for both fall and spring at the same time, and now there's a mental default to say I am coming back for spring because I am registered. All they had to do was hacked the registration system to put both screens up at the same time and it was a 3% increase in retention. James Madison, doesn't have a success problem, but nevertheless it has invested in a massive student success Center. If you ever get to go see the thing, is a converted hospital, 220,000 ft.<sup>2</sup>, five stories, in the middle of campus. They don't \$77 million into it and every services located in it. I visited it. I was shocked. It was jampacked with students and it was the best in center I have ever seen. Some of the secrets behind it, they did some great design trying to get people to engage the central services on the fifth floor, to get to the registrar you had to go to the rest of the building to get there. The linchpin in the operation was to get a Dunkin' Donuts that on the first floor area by the social studies area, it's private but you cannot avoid talking to your neighbors, so it semi private. I interviewed a student briefly who said he liked it because it was quieter than the first-floor library but louder than second-floor library. There are interesting things going on in the building as you peel the onion. Another student, a sophomore, and I asked her what she used in the building. She was talking about using

the academic support Center, shoe -- collocation of services is an interesting hack. You put the things you want students to engage with and where they are and it will naturally start using them. The best example and the data we have here is the mental health center. This is directly next to the Dunkin' Donuts. Is a 20% increase in the traffic to be in the building versus where they were before. This is the little house in the middle of campus that everyone knew what you were going into. The idea here, you don't have all that money and this building, but you can't collate Kate -- you can collate Kate -- Kolo Kate -- co-locate services.

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Half of the students who leave school leave their school lead in the first year. It's about less -- it is less in private. 50% of your students leave after the first year. No one pays attention. Literature has ignored them. Most of the literature was written by Vanderbilt Syracuse. They have a first-year retention problem and not so much later on. They have been ignored. The general metric that everyone is rated against his -- against it is, there is a huge population and the students pay tuition. You would be interested in the script. There are two important hurdles. They have eyeball the 2.0. They did not drop out freshmen year. They came back for sophomore year. They like you. They will not transfer. They have sweatshirt and everything. Why are they not finishing? We built a system for three quarters of 1 million students representing I forget how many schools, about 50, four colors of bars show the total aggregate of student. First year GPA and first-year students. These are students who did not come back second year. Certainly the students below 2.0 are disproportionately represented here for not coming back in the second year, but even some very good students not coming back, they transferred someone else they will graduate is not from yours the light colored bars or graphics. Students who do better in college are more likely to graduate. But then the blue group these are second-degree finishers. This group is interesting because it's a huge talk -- jock and they have 2.0 to 3.0, that can be about 20% of your student body. 84% return per second year, great retention rate. 40% graduate, bad graduation rate. There something going on with that group that we can look at. This is the group we think is a death by 1000 cuts. They don't have a massive problem, they had a little. I will try to get more metaphors and as we go.

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We look at what was happening. There is a clear trend. This is broken down by fate, gray bars are graduates and the blues are dropouts. The time of when it occurred. For graduates you got that are academically on a whole as you progress toward graduation. The faster you are going to graduate the faster you got better. These were the students who did not make it. They stayed stable and then you fall off. Interesting thing, you can see it coming from a mile away. This is an aggregate, individual students are different. At 2.0 it wasn't catching anybody until the last term. There is something wrong with this population. It is bottle in advance, it's probably not grades, that grades could be an indicator of underlying factor, but it's clear there is a trend. We told a story, what with this be like for student? Started the first year with the 2.0 or 2.5, makes a little mistake and doesn't realize you have to refile FAFSA, you have to the powers that were because now to stay in school you don't have financially. Your performance goes down, things are going worse for you, now you are in academic and financial distress and potentially emotional distress. This is when your school notices you. Now is actually a high effort high intervention turnaround. Intensive tutoring to improve your GPA, assistance to stay enrolled and maybe the mental health counseling. Or we could have caught you earlier if we had seen me do not file the FAFSA why is this not happening? Everything that universities do is reactive in this regard. You could say this is reactive as well, but the staff firepower is not there to go after every student who doesn't fill out all forms. They wait for the problem to manifest. And just like the diabetic who now has a problem with his feet, when they finally show up at the emergency room is costly to fix the problem.

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We have developed a list of things for schools to look at little things. If you look at all the little things you can catch a lot of problems and we have had some school so that the most basic indicators, are you not registered for the next term? And to start calling and asking. Were you not register, I forgot. Go register. That's why you have a Versar. In a school like middle Tennessee, they has seen immediate 3% gains just from going after that stuff. Basic stuff. Only reason they were not doing it is prior to middle Tennessee hiring a lot of people they did not have the ability [ Indiscernible ] there are some schools that have solved this and a salted by using students themselves. They have student staff call centers, they largely call prospective students or donors. They turn the students around based on inward and said, call everyone who is not refile financially and everyone who's not register for next term. They could counter a problem. It is

working great. This is a relatively new practice, but is simple. This is what everyone's attaching to now. This is where we get the capacity to do these things. It was there all along.

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On high-risk, I know we need a fireside chat and I have a few more slides. The answer here is you have to be able to do it. The only way schools can do this is if they create a coordinated care network. The idea is that the advisor and faculty member and the tutor in the financial aid office, mental health office and any others offices, therefore we disconnected. They don't know each other and they don't share notes. They do not collaborate. One still -- one school, Northeastern, they set up one person, she handles high-risk cases. She has 150 high-risk students, their probationary some way or they get a bunch of early alerts or they are referred by advisors but the students need help. She works them that she works with them on a weekly or biweekly basis. She has fixed her CRM to make referrals to get the students where they need to be. By increasing the amount of data flow, and I'm talking about notes or check in. That sort of technology is still relatively uninstalled and universities but this was the stuff that frontline folks get excited about. You can finally do it. It's basic stuff that is becoming commonplace, is finally reaching higher education.

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A couple of more slides and then we can chat.

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One big thing that is driving the change in healthcare is accountability. And ownership. No ownership of the patient is being redefined by the panel idea. Accountability has always been in place. This is your patient you take care of them. These are completely absent in higher education. When you have a problem and everyone owns it, this is one of those problems. That is beginning to change a little bit people are actually held somewhat accountable for this problem. Here is the basic problem, if you've ever been in academic administration and the University, what will make you beat your head against the wall again and again. Used to be the student success was the responsibility of the Vice President of student affairs because obviously the students don't like to hear this. That it became a provincial issue and they handed off to undergraduate studies. Faculty has to be involved. They are also responsible for academic advising. The Vice President of student access which is a new role created out a lot of schools which is elevated to a cabinet level at some schools. Middle Tennessee has a guy who's in the news quite a bit. Florida State has one as well. About 10% of schools have a cabinet level person with success in their title. The Vice President of role management, about 40% say they own success, and completes the maze. You have hypothetical student offense to keep the pieces in place and span across all of the silos. Universities are bad at standing silos. There are schools bundling these things together. One of my favorites is Portland State where one of the people we know there has done a land grab and bundled all the things together to make a perfect office. Other schools are doing this through better communication. Another problem occurs at the frontline. That is at the high level, what about the persons working with students every day? The academic advisor is the workgroup. This is a professional advisor. Most schools hire people whose job is to advise students. In the olden days it was your faculty member who provided the advice and guidance. But they were not very good at it so you went to the department secretary. She actually knew it. Then all of the student started asking her so she said this is now my job and I want to get paid for that and now I'm an academic advisor. The professional advisor was poor. It now has national Association and everything. This is how they think about their world. They do course planning and guidance. And recently they have done success stuff but they believe in their heart. Sometimes --

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Kansas State is an exception from the spirit there are schools that have changed the model. This is more common than what you are describing. You are describing met. I care about students at the center and I do things, registration being one, and now I am a Swiss Army type role and I am a concierge. That sounds what you are -- that sounds like what you are describing. Kansas State have been ahead of this for a while. This is a shift, I put this on a big screen in November and this is the one thing everyone took out cameras to take pictures of because it captured the problem. I want my people to move to the right. There are no people who are doing performance reviews tied to retention rates of their coworkers which I bet was not the case for you. It was? We have been able to I the device expect ologies comes to ownership and student success at universities. In every school and I showed a slide, you don't have all six of these things wrong with you but you don't have all six of these solved. I will walk you through quickly. Lack of senior leaders, the faculty don't know their role, they had a variety of user perspectives. About 20 to 30% of faculty really

care but they are not being activated to go after it. Advisors themselves are very fragmented at most schools. They grew up in their own academic departments or colleges. Colleges don't talk to each other. Some schools don't have great academic handoff. No one is assigned responsibility for the success of the cohort. They might have responsibility for advising meetings, but half of professional advisors don't even do annual performance reviews. It is hard to do that. Metrics, no one knows what the track. We have some metrics which update yearly like graduation years and retention you cannot manage on that. We need to look at these day by day week by week like the number of students for next term, number of students with a degree plan, students and schools need to go into this direction. It's hard to reward people for new -- good work. Incentivize people to do the right work. You have to build it into their performance review. Do great and get promoted.

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Faculty are a real problem. Nowhere is this showing up in tenure. Maybe your service component and maybe not. The way that schools are beginning to get tackled the numbers on board with this if they have -- the process has one thing, more faculty lines. At some schools they have broker relationship by which they have given each academic unit a target to hit. Then they said you can come up with a plan to hit the target or not it's your choice. But your final plan and you hit your target, you go to the front of the line for the open faculty lines next year you might not get it, but you go to the one of the line and you get top consideration because you are proving the quality of your unit and you deserve to get bigger and because you increase the retention rate you might need an extra instructor. This is only coming about now. If I was to give a big area to spend my time, it would be finding the best ways to get accountability that -- built into this problem in higher education while staying true to hire education mission. This is not a corporate structure never should be but there may be a couple of things that could be learned from people who have been doing this forever. That's largely what I had to say.

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[ Applause ] What do we do now?

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I wanted to kick off a couple of questions.

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I heard about the incentive agency that a student has been the first light about \$1 trillion and all of that. Why shouldn't I go to the course, what is the incentive to keep me going to an institution over time? Or from a more mature student and I have a bachelors degree and I don't want back to university because I can pick up an online course, how does that help -- self help figuring?

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If you look at the University of Phoenix's of the world, the graduation rates are quite bad. There has to be something about you being present to keep you invested in an institution. Not always, but for you to get there for years, and if you are online you're probably not full-time, it's tough. If you are doing job retraining and you just want a course or traversal and restraint, that is where the online providers are great. But truth be told, now most students are usually hybrids. We hear repeatedly stories about taking four courses are brick-and-mortar, on campus and take a online course from my dorm room and my own school because it didn't fit into my schedule or it was a self-paced course and I like that better. It's evolving but not quite to the degree that Clayton Christiansen was predicting four or five years ago with the destruction of higher education there's something about being at a university and having a credential from an established school also the students recognized as a value.

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Did you see the study on the right?

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The study of Stanford where they look at thousands of students taking the right which is a private institution and they were close enough to a brick-and-mortar school to go there but opted to take an online course. Once he took the online course did worse in all subsequent courses. What that magical interaction is, and I wonder looking at public health data and given in many cases students are actually human beings, is there any way to integrate the two databases so the health data is going to give you an indicator of people who are in distress but not an academic solution, but it will be health-related solution.

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What a nightmarish solution. You could but I think the lawyers will stop you.



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I understand, but as someone is getting to the age of reason, any amount of money going into it, looking toward wanting to continue success --

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All I can tell you is current state right now. We integrate with a lot of different offices around campus. This is a bidirectional data flow. There's one big office that is unit directional and data only flows into, that being said, if you were to collect interesting information about student and their state the mental or physical health, that is a potential reason why you would not come back and has been a great study on shocks that knock you out of higher education and some of the Sun Life events that occur everything from I got a job I was expecting, I lost my scholarship, but there are some helpings that show up in their like getting pregnant. These are shocks that knock you out. It would be interesting to incorporate that but I see too many legal challenges.

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Okay.

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I was wondering, what is the role of financial aid? Because it feels like for ownership accountability, someone needs to be encouraging. It feels like no one is really hurting. It's hard for them to make the decision when the incentive is not there. Like the health insurance, the average population is not feeling the immediate incentive.

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Financial aid is the great undiscovered country here.

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That would be the place where ownership and accountability really could be implemented if they were to say, if you can save us this much, you can get shared savings, earning the incentive.

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There are some experiments in this right now. There are schools that have the further you progress, the cheaper you get. You get a grant if you become a junior and a bigger grant for senior. It is like revenue sharing. If not how they would think about it. A little bit of that the phrase cost. More broadly speaking, there are trends going on with financially better interesting, I will type back in a moment. Just to make you aware. There are different kinds of financial aid, there's merit-based aid, I will that away. That is a coupon to entice you at the moment. Sports scholarships, entices your moment. From a need-based standpoint, everyone has made the assumption that we make you an offer early on and is what you need and we updated when you refile year-over-year. People have not brought -- thought strategically. Georgia state has. They have panther retention rate. These are alumni funded micro scholarships. They deploy them to specific students who are last-minute problems to get them over the finish line. It's the best best practice we've ever seen. It itself and because the students typically have unpaid balances and you are getting revenue out of a student, alumni are engaged customers are graduating and everyone loves it. People just haven't thought strategically because the role managers have gotten involved. There is a piece of accountability out there that is going to push schools and that's access to federal financially. One of the things the Obama administration try to do was to tight access to favorable loan rates, a very good school based on the metrics they layout your students get to you for less. If you are expensive -- if you are a bad school the student loan is more expensive.

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[ Indiscernible speaker away from audio source ]

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It is a totally different actor in that case. Largely speaking there are bigger trends that are only beginning to be fully explored because people thought financially was done and there was nothing more to do there. But there are really some creative things that can be done.

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If you can tie it to the performance of individual or the institution.

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Those are just beginning to come to light.

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We are slightly over time, to be mindful of everyone else's commitments, to take maybe one question from online.

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The comment is on the loan rate, \$50 billion a year, when the banks got into trouble, the loans were picked up by federal government. \$50 billion a year in interest.[ Indiscernible - low volume ] Congress will never give that money back to the institutions. That story is much more complicated. This is something that goes on in smaller MBA programs , they register you in the 12th week of the semester for the following semester and on the 14th week of the semester they deliver your books. The point being, that reaffirms that you will show up.

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Is the Cleveland state model that you are mentally involved in returning rather than making a choice.

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It is a commitment on your part. Volume --[ Indiscernible - low volume ] That's a great service. I love any of these bridge things. We have seen schools also begin to experiment with summer programs in a similar way. I can pull you forward a little bit.

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[ Indiscernible - low volume ]

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I will have to look for a school that is doing that.

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[ Indiscernible - low volume ] You bring up a point and when you think about success and best practices, lots of good ideas seem like good ideas but benefit the students who need it not at all. Under your world, this would probably benefit the students were probably coming back anyway because they had the ability to pay and they are probably from a pair-off background and they're going to graduate.

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Are there any online questions?

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Michigan State is doing a lot of this. The Healthcare Services, counseling, they are all bundle. They are in neighborhoods all around campus. I'm aware with vision statement been here for your half, but there isn't a lot of staff involved with identifying high-risk students. Students have cards they use for health centers and tutoring so they get information about health and health. They try to get faculty members to fill in first your courses so the faculty -- where the --[ Indiscernible - low volume ]

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The faculty is an interesting population. They are absolutely critical actors for a lot of this. Doesn't buyers - - advisors in a lot of cases and interact with the students and as instructors they interact. And the only curriculum. -- And they own the curriculum. Everyone has added courses to require curriculum.

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[ Indiscernible - low volume ]

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I will put aside the program redesign angle because that's another talk. But getting faculty members involved in stuff like this about the use of data, two good examples. One come from's from a school for the chair of the psych department was using our predictive model, they have seven faculty members. I know the relative risk of all the students. The low risk students and came to the worst advisors, these people want to be mentors they don't want to be advisors. Come in and I will chat with you about how cool psychology is an think she might be able to do a graduate and take this class. For the high-risk students, I give them to the better advisors will do some caregiving and higher stress cases are mine. And I have another faculty member that I keep completely out of this and you work with the data. That was divisional labor. The University of Northern Colorado has a biology department with 20 faculty members and they all have to do some advising. They found that they only had five or six faculty members that really wanted to do anything with advising or had any skill in it. They said you other 15, you will be junior and senior annual to mentoring stuff. Meet with them once a term and given their pen and let them register. The five of us are going to focus on the first two years. That's too many students for normal means. They are offering five group advising sessions. All five of us faculty members will be here.

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Will look at the students coming in and will curb off the ones that need extra help. We will do a group advising session and these are things you want to know, will meet with each student five minutes will have conversation. All the students who need extra help are at the back of the line, they start the students who need it the least and feed the students who need it the most through the system. They think it is working great. The larger story is that not all faculty members are made alike. The level of interest in attitude toward

this tremendously person-to-person treatment, a lot of administrators tend to feel this way. Instead a better approach is to work with the willing. 80% of your faculty don't want anything to do with it, talk to the 20% who are believers. They are probably younger and data enabled, and there probably going to work better.

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[Event has exceeded scheduled time. Captioner must proceed to captioner's next scheduled event.

Disconnecting at 04:41p EST. ]

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