>> So it is such a pleasure and and honor to be here today and to have the opportunity to talk with you about some of the work my colleagues and I have been doing.

I'm a social psychologist so I wanted to start maybe a little bit broader than I might have otherwise. To just note how people in my field, in social psychology, are increasingly interested in social problems and in testing interventions in real world settings to address problems. It actually harkens back to the early days of the field if it was founded in this way, but it left for a while and it's come back.

And I think we bring a distinctive approach to social problems. That's part of why I used the word wise. So there's some just powerful recent examples, for example Chris Bryan, who is a social psychologist now at San Diego, manipulated whether votes completed a survey the day before an election that either referred to voting or being a voter.

So people answered survey questions like, how important is it to you to vote in tomorrow's election, or how important is it to you to be a voter in tomorrow's election? And Bryan and colleagues theorized that when you keep answering questions about to be a voter, it turns that chore into an opportunity to become a good kind of person, a valued kind of person, the voter.

The kind of person we all want to be and found the largest largest ever effect in a randomized controlled trial on voter turnout in two separate elections, one, Obama's Election in 2008 in California, the second 2009 gubernatorial election in New Jersey. Eli Finkel, a social psychologist at Northwestern and colleagues delivered an intervention in the midst of a two-year longitudinal study of married couples.

Eli is a relationships researcher and in this longitudinal study, people were asked to describe their relationships, the conflicts they have in their relationships. And halfway into the study after the first year, he added a seven minute component to the survey which just asked people to say okay, now that you've described your conflicts in your relationship.

How would a neutral third party who wants the best for all understand this conflict? What prevents you from taking that person's point of view the next time you're in a conflict situation with your spouse? And this was done at month 12, month 16, and month 20. And what you see in this graph here is that this attenuated the, otherwise I was very sad to learn, lawful declined marital quality over time.

It attenuated that decline and it kept people's marriages relatively happy because it's a very broad composite of measures like intimacy, satisfaction, love, passion. Trish Devine, a social psychologist at the University of Wisconsin has done work on implicit bias and implicit prejudice. And has created an intervention that she calls Breaking the Prejudice Habit which is designed to promote awareness of education about implicit bias as a habit, something that we acquire from a culture that we're in, a culture in which there are stereotypes that we are all exposed to, that all seep into all of our brains.

And strategies that individuals can pursue to try to reduce their own implicit bias. This led to reductions in implicit bias and increase in discrimination over a two month period. These are just a few examples of many of the different kinds of social problems that social psychologists take. And I call them wise because they are, not in a very generic sense, but in a very specific way, they're wise to particular kinds of psychological processes.

They're psychologically precise. They're aiming to address those specific psychological processes that otherwise can contribute to social problems. They are not kitchen sink interventions in any way. However, they are not myopic. They

understand that process as occurring within a broader network of forces. And they theorize how that process contributes to that broader system and aim to alter it within that system.

To effect change, often over time. They also are wise in a second sense in that they use psychologically smart tools to alter processes, persuasive techniques. Often people are asked to advocate for an intervention message and we'll see this later, rather than simply exposed to an intervention message. So often these interventions are brief and sometimes one off or sometimes just a few doses, but their goal is to aim it at dynamic process that's unfolding over time like in the marital conflict circumstance.

And in that circumstance you could really feel how if you think about a conflict in your marriage from a third party perspective. That might change how you start to interact with your spouse. Your spouse has also the same intervention. Maybe they're starting to interact with you a little bit differently.

Suddenly you have a different kind of person. Each of you is interacting with a better kind of person, a person with whom it's easier to handle a conflict, it's easier to make that conflict productive rather than not productive. These interventions are also all context dependent as is all of our psychology.

So they have to address psychological processes that are actually present in a given context, and they depend very importantly on affordances in context that can support or sustain initial treatment effects over time. So if you have a conflict with a spouse but your spouse is crazy. And it's a really toxic environment.

Then that Finkel intervention is not gonna be effective. You're not gonna wanna take a neutral third party point of view. Or maybe your neutral third party point of view is to get out of that relationship. That study was done with middle class, typical kind of married couples in the Chicagoland area.

And it wasn't a representative sample of Chicago, Illinois, I'm not trying to imply that, but it was a broad swath of normally functioning people. Not people that were in high levels of marital counseling. So in that context, if you take that neutral third party point of view, then your spouse is a respondent to your new treatment and you are a respondent to their new treatment of each other.

In ways that can support and sustain positive effects over time. And this we'll see too in education contexts. These interventions as I understand the word nudge go well beyond nudges. And they do so in a really important way. So I think of nudges as often changes to specific situations to encourage better behaviors in that context.

For example, classic work by Brian Watson who's a marketing professor at Cornell. Shows how reorganizing school cafeterias to make it easier to get the healthy food. Encourages kids to eat healthier. But these nudge theories in a psychological sense have no theory of self. They're not grappling in deep ways with how people think and feel.

The meanings that they make as they walk about the world. Interact with objects in the world, interact with each other. And so their ability to effect people's behavior in disparate circumstances and over time is often quite limited. And yet many of our most important problems, problems with health, problems of relationships, problems of education, often involve lots of different behaviors and lots of different circumstances.

Wise interventions, instead they try to change how people think, and feel in basic ways. The self, how we understand the world, how we understand other people, so that we can behave more adaptively, and hopefully flourish. That as prelude, I wanna turn to my conclusions before giving you the details.

So, two conclusions that I want to draw. The first is that, a really important mediator of social disadvantage in education I think is psychology. That is one consequence of social disadvantage. Of socioeconomic disadvantage, of racial, minority status, you're being targeted by stigma or negative stereotypes, is to put people into really difficult psychological circumstances.

Psychological circumstances that make it harder to engaged, and succeed in school. So, in this place, psychology can mediate the reproduction of inequality in education. And yet, it is possible often through some surprisingly brief

exercises, to change these key psychological and that doing this can in some cases reduce persistent inequality in education.

Okay, so let's get into the psychology. So, when people go to college, what is it, when kids go to college, what do they think, what do they feel? And here, we're looking towards the front of the classroom, from the perspective of a student. What does it feel like for a student?

Well, what are some worries that students have in school? There's some really obvious ones. Questions like, do I belong, is this a place in which I'm gonna belong, if I feel lonely, if I feel disrespected, does that mean I just don't belong here? Does that mean I just don't belong in general, in college, questions like am I smart enough?

If I fail that chemistry test, does that mean i'm just not cut out for college material? Does that just mean i'm dumb? Does that mean I reached my limit? Questions like does it really matter? Why am I having to, you know, parse latin grammar, or do trignomials. It's boring, or I expect to fail, or it's frustrating.

Is there any other reason to try? These are our psychological questions, and psychological worries, they get into people's' heads. They're ones that can prevent them from fully engaging in school, and succeeding in school, and importantly, they're ones that we can address through a variety of different kinds of interventions.

These interventions are sometimes quite brief, sometimes 15 minutes, sometimes an hour, sometimes a little bit more, and yet, in numerous randomized control trials now, they've been shown from middle school through post-secondary context to have the potential to benefit students' outcomes. When people hear about this, these kinds of works, sometimes they have this reaction, well, they're magic.

And sometimes that takes a form like this. There are magic tricks. These effects can be real. They're not serious attempts to understand and remedy the real, legitimate, persistent problems that we see in education. Of course, I don't think that's true, but equally untrue is the second kind of response, they're magic bullets, this is what we've been waiting for, we need to get this thing, get this whatever it is.

Get this handout, get this online program into every kid in America, without delay. And this too is mistaken. And these critiques, or these reactions are mistaken in the same way that neither of them really understand what it is that these interventions are trying to do. And thus proceeds with a theory in mind as to where, and how they might be effective in different contexts.

Different kinds of students. Let's consider the analogy of an airplane. It's pretty mysterious to me, how an airplane lifts off into the air. I've flown many many miles, but still you're in this huge thing that must way a zillion tons, and you're lumbering down the freeway, and it somehow lifts off into the air.

It's this incredible miracle every time I fly. And, when you think about it, there are some obvious features of this system that are essential to its success. So, somebody is in charge, right? Maybe a few people. And they're making it do stuff, and then, there's something that's making it go forward.

That's the engine. And then, there's this thing called the wing that seems really complicated. And seems important to how airplanes fly. And you dig into it. Maybe you go to the Smithsonian Air ,and Space Museum, which is a wonderful exhibit on the Wright brothers. And you find out, that there are whole science understand of airflow, on how you can shape a wing, so that the air flows faster beneath a wing than above it creating a force called lift, that raises that airplane into the air.

And if you go to the airspace museum, you'll find out that the Wright Brothers came to understand these dynamics by an interaction between laboratory research in wind tunnels, in back rooms of their bicycle shop in Ohio. And field trials in North Carolina where they would take newly fashioned wings, and test them out to try to get something that weighed more than air to lift off into the air.

Now, similarly, in education, there's a lot of forces that are promoting success in education. Education is an

environment in which, on the whole, just about everybody wants to succeed. So, of course there are exceptions, but on the whole kids want to succeed. Kids want to do well. Their parents want them to succeed.

Their parents want them to do well. Teachers want to be good teachers. They didn't go into teaching for the pay. The went into it to inspire kids. So, there are all sorts of forces that are trying to promote this system to take off. But there's also, psychological factors that can make this system not function the way that it's supposed to function.

So, when students worry about whether they belong they might not go to office hours to talk with the professor. They might not reach out to a peer who seems to be doing well in the class, and ask them for help. When they endorse a fixed mindset about intelligence, they might infer they're just dumb at chemistry, and can't succeed at it.

When they face negative stereotypes in school, they might worry how other people other people are going to view them, just as the say, the dumb girl in math, not as a person with potential to succeed. And we can understand these processes again through basic laboratory research. As psychologists, and other fields have done.

And then, in field settings we can develop interventions to tweak them to help the system as a whole function in a sense the way it was designed to function. So, let's turn more directly to belonging. This is a quote from a woman who graduated from Princeton in the mid 1980s.

And she's writing in her senior thesis, having spent a full four years essentially on campus. She writes, my experiences at Princeton have made me far more aware of my blackness than ever before. No matter how liberal and open-minded some of my white professors, and classmates tried to be toward me, I sometimes feel like a visitor on campus as if I really don't belong.

It often seems as if to them I'll always be black first, and a student second. This is a really powerful quote, and story because this woman's at Princeton, a place of many advantages, because she spent four years on campus you would think that she might have had a deeper sense of her connection to the campus and to her peers there.

It's also a very powerful quote because it's coming from Michelle Obama writing as Michelle Robinson in 1985, a woman who many of us, and many people in the world, look up to and admire so much. And if a woman like this can experience such profound worries, profound doubt about her belonging in college, then, it's safe to assume that that's something I think many, many students may experience.

In fact, we don't have to go much farther in the world of Washington DC to see the same sentiments, and I'm not trying to pick on Princeton at all.
>> Sonia Sotomayor says, at Princeton, I felt like a visitor landing in an alien land. I spent my years since Princeton at law school and various professional jobs not feeling completely a part of the worlds I inhabit and here she is writing into dissent in the Fisher case.

Race matters because of the slights, the snickers, the crippling judgments that reinforce that most crippling of thoughts, I do not belong here and here's a student from rural South Dakota who describes going to a New England College. I feel like I've been dropped on Mars. I mean it's so different.

I had a conversation with Tom at Princeton not to long ago and he described the story of being given a tour of a fancy new dorm that had been built on campus, and they were showing him all the amenities just to elaborate how much money they had spent on the place and at one point he asked the architect and the dean who were showing it to him, what would this feel like to a student who is coming in, say from rural Appalachia?

And they said, we never thought about that. So, Jeff Cohen and I describe this state as a state of belonging uncertainty and the idea is that whenever we go into a new setting, you take a new job or you go to a new school, we all, all of us do wonder whether we'll belong in that setting wonder whether other people are going to respect us, value us, and include us but those kinds of worries are especially prominent when we go into environments in which our group is negatively stereotyped or our group is underrepresented numerically.

Where there's some group-based reason we have to wonder and keep re-wondering whether or not we'll belong in that setting and that uncertainty has a very specific consequence. What it does is it creates ambiguity about the meaning of bad social stuff that happens. So, if your new supervisor doesn't respond to your email for several days, or your new professor, or your graduate student, or if you get criticized, or if you just feel lonely.

Those events can create the feeling that maybe you don't belong in general. If you walk into that setting bearing with you the under-representation of your group and facing the negative stereotypes that attach to your group, and that stuff happens. You're asking yourself already, do I belong here? This stuff happens, it can feel like maybe I don't belong here and that can prevent students from fully engaging in college life.

If you conclude, if you infer that you don't belong, in college then you're not gonna go to office hours, you're not gonna go find the advisor, you're not gonna make an effort to make friends. Now this is a potential target for intervention. The specific goal of this intervention then is to force, is to not prevent people from having those inevitable slings and arrows.

Everybody's gonna have difficulties like that. Everybody feels lonely sometimes when they go to college. It's instead to change the meaning that we attach to those events to forestall these global inferences of non belonged. This is what we call the social belonging intervention and the goal is to provide a more a more optimistic and hopeful narrative for understanding.

Normative kinds of negative social experiences and it consists, it's quite simple, it consists of stories from upper year students. Who in a variety of different kinds of ways convey the simple truth, that everybody worries at first about whether they belong in college but with time, everybody comes to feel at home nd it's designed, that message then is designed to prevent students from attributing these kinds of adversities to a permanent lack of belonging.

This intervention, I should say, is built in part there's a history within the field, this intervention didn't come out of nowhere. I'm not gonna give you the long, intellectual history of it, but there's a rich tradition of interventions like this that aim to address students attributions in college from social psychology.

It includes a number of what I think of as wise elements. For example, we don't tell students we think you don't feel like you belong, so we're going to give you an intervention. Instead we treat students as benefactors of other students, of future students, of younger students rather than as beneficiaries.

We never tell students you're receiving an intervention, we tell them we've gathered some information, we'd like your reactions to this information so that we can help future students who are gonna come to college understand more about what coming to college is like. Then, this message gets reinforced through saying is believing techniques.

Students write an essay describing how this process of change of coming to, worrying, at first, about whether you belong in college, of having, and over time coming to feel at home, how that's been true of them, why that's true on their campus. In the initial trial, this raised African American student's college GPA from sophomore through senior year.

This was a one hour intervention delivered in a one-on-one basis. In the spring term of students freshman year and what you see is it that it changed the trajectory of African American students achievement over time as though step by step, term by term they gained more momentum. They gained perhaps more resources, more friends, more mentors that are necessary for everybody to succeed in college.

So, the achievement gap production's about 50% over this three year period, but the reduction senior year is is actually 79% and here's a replication study with women in engineering, and what we see here very importantly is that the gender inequality, this is the outcome here is first year GPA in engineering in a Canadian university, this is on a Canadian scale.

What we see is that the gender inequality in GPA is restricted to those majors in which women are severely underrepresented, where on average there are just 10% women. In majors that are more diverse, where there's about a

third women, women are doing pretty well, but there's a significant gender gap in the male-dominated majors and that's where we see the intervention habits.

So how does this work? So it works, first, by changing how students understand adversity. So, this is a black woman in a control condition in the original study and she writes to us one night, everyone's going out without me and they didn't consider me when making their plans.

At times like this I feel like I don't belong here, and that I'm alienated. The intervention had no effect on the first sentence. Everybody had things like this happen to them but it changed the meaning of those events to students. When we looked at daily dairy data we found that for black students in the controlled condition, on days where they had experienced more adversity, that night and the next afternoon they reported felling like they didn't belong on campus and the intervention cut off that pattern.

It didn't reduce the bad events they experienced but it prevented them from inferring as subsequently that they didn't belong and that change in social construal statistically mediated the three year gain in academic performance. How does it work more broadly? That's in the daily diary. That's immediately after the first week after the intervention.

Here's broad sort of working model, a conceptual model that draws on data from many different studies and the idea is that when people are part of disadvantaged groups in college, ethnic minorities, first generation students and they experience a challenge or a setback like critical feedback or feelings of loneliness that gives rise to this interpretation.

I, people like me, maybe we don't belong here and that leads to a behavioral response, a withdrawal from the environment, and ultimately the erodes academic outcomes. The intervention gives people a different understanding for these adversities. The understanding is, this is the kind of things everyone goes through and the transition to college is something that I can overcome.

That leads a sustained engagement in the social and academic environment in college and better achievement of persistence over time. Okay, so those first interventions, the engineering one and the one with black and white college students, were delivered to relatively small samples and and one on one and very small group settings.

How could we reach more students with an approach like this? To try to do that we turned from interventions delivered during the school year to pre-matriculation interventions and this form the intervention gives people a psychological roadmap for understanding college. What are the challenges that you're going to encounter that normatively students encounter in college and, how do people overcome these challenges?

So, here the goal is to help students anticipate these challenges and anticipate adaptive responses to those challenges. In this case, we're asking. One theoretical question we're asking is, is a kind of preventative psychological intervention possible or will people just forget the intervention message if we deliver it to them months before they even arrive on campus?

Yet this is really important because it's important for large scale dissemination. It's possible to reach entire cohorts of incoming college students through online pre-enrollment materials and colleges do this all the time. Getting students to complete roommate preference forms, upload id cards, fill out honor codes, etc. We did this in first day in three trials that all began in the same year, these are current Juniors.

I'm gonna describe to of the trials to you, one of the charter schools trial and then one of the university partnerships. So, first we looked at a sample of urban chartered graduates. This is a collaboration with David Yager and Julie Beckworth that will commence yes prep. Lauren Keane, Dave Panesko, it was funded by the Gates foundation and conducted through our perks platform at Stanford.

We had conducted the intervention previously with selected college students. This was gonna be a sample of almost all ethnic minority, almost all first generation students who were gonna go to a wide range of two and four year institutions that were relatively low in selectivity, so we went we did an extensive R and D process in collaboration with the design school at Stanford to make sure that our message and the stories that we were telling were most

appropriate and fitting for this population.

So, we did interviews with students, brainstorms, we had them draw journey maps We worked with the d school to synthesis our hypothesis. We interviewed and focus group tested revisions to intervention contact, and ultimately we rewrote the intervention. So, here's an example of us, we're at the design school, working with students, it was colorful and fun.

Here's an example of one of the students' journey maps, going into college. This is just one technique, one way to start to hear students' stories. This is an example of the mixed method approach, where we use the qualitative work to inform an RCT and ultimately, this led us to identify four key themes that we incorporated and revised in the intervention contact.

The first was that students coming from these charter school world seemed to lack agency belonging in college, instead believing that belonging should happen to them and this is really a sad, poignant story that I had with a student, where the student was at San Francisco State. She was a first-gen Latina.

She carpooled to San Francisco State with her older brother and so she carpooled there and carpooled back. So, I asked her in our conversation, so what do you do when your brother's in class and you're not in class? And she said, I sit in my car and I said, what do you mean you sit in your car?

And she said, I sit in my car and I look out. I look out at all the people. All the people walking together and I think, how did they meet each other? How did they become friends? And I sit in my car and I watch them and it's like heartbreaking, right?

Like, here's a freshman in college, a time in one's life when everybody is receptive to making friends, to meeting people and she doesn't know how to interact with them. She doesn't know how to initiate interaction. She doesn't know how important that is maybe and so she's sitting in her car.

She's not actually getting out and introducing herself to somebody, finding out if there's a student group that might be interesting. So, we've revised the intervention to really emphasize active steps that people need to take, that students need to take to build connections with professors and students and that those take time to pay off.

Those aren't going to be automatic. Second, students sometimes tended to believe that casual friendships in college are distracting, not helpful. They said, I'm in college to do me, to get a degree, not to have fun or make friends but we thought ultimately, that was not gonna be a productive strategy.

So, we licensed things to create really weak social ties, by emphasizing their utility and their value for stress reduction, we told the story of a student who said, my first year of college I was really wanting to do me, I was really focused, more stressful sometimes and so then I started playing video games with these guys, at first I thought I was just wasting time but then one of them had taken the class I was thinking of taking and he told me which professor to get.

Now looking back those, became some of my close friends in college we've gone through college together. Third students sometimes believed that college friends wouldn't know them as authentically as high school friends describing their friends in college as people with whom they just hang out. So, we've emphasized that the college friends don't have to compete with older friends that you can have college friends and high school friends and they both can be valuable and helpful and fourth, students tend to believe the college professors don't care because they don't know your name.

They don't greet you at the door and in charter school world, some of these kids have the experience of calling their teachers up at like 11:00 on a Friday night asking for help on math homework and their teacher will be right here responsive to them. So, we explain that in college, professors have a different way of showing they care.

Not by sending.
>> By giving really tough critical feedback, holding you to a high standard because they know you have potential. So,

we evaluated this with two successive cohorts of charter school graduates, the first Mastery in almost all African-American students in Philadelphia with Yes Prep almost all Hispanic in Houston and Cohort too has expanded to include those plus achievement first to inspire and kept for a larger sample.

All of these students were admitted to a four or two year college. They were all academically prepared for college based at. Students completed the materials online in the school computer lab toward the end of their senior year of high school in May and the outcome was clear in house data full-time enrollment.

So, they saw things like this, you're finishing high school, you're going to college, you're excited, you probably have lots of questions about what to expect. Here's one group and you see that they have headphones on, subportions of the material were audio recorded, the stories were audio recorded so they could hear and see them at the same time.

They have dividers. Between them, so they're not gonna be distracted. Here's one of the essays that one of our participating students wrote. She writes, the initial worries about belonging to a college are likely to go away over time, because once the student becomes more involved in social groups on campus that interest them, they later have friends with the same interests.

Students understand they can go to office hours to meet with the professor to discuss the situation they fell that the professors are there for them and want them to succeed. Initial feelings will also go away after learning more about campus. A student might go on campus blind not knowing where things are.

Once they realize this they're more likely to feel at home. You can feel her forecasting what is this experience going to be like. And then forecasting behavior she can adapt in that environment in order to improve her experience and overcome challenges over time. In some studies, not in this particular study, but in some of the other studies we have, students anticipate how much they'll belong when they first get to campus.

And what we find is that treatment-conditioned students anticipate lower levels of belonging, when they first get to campus. Which is exactly what the message, the intervention is conveying. But when we ask them, how much do you think you're gonna belong at the end of their sophomore year, there's no difference between conditions.

So the treatment is leading students to anticipate a growth in belonging over time, rather than just coming in at that high level. Okay, here's the first cohort, and what we see in the control condition is numbers that shouldn't be especially surprising, even though these are students who benefited from relatively high quality education, prior to college.

They are not persisting in college at the rates we would like. Treatment effects start emerging over time in sophomore year and they persist through semester five. This is consistent with the pattern, the first graph I showed you where the treatment effects grew over time. Potentially as students are requiring more resources to succeed and do well.

This pattern also does differ to some extent between Yes Prep and Mastery. the interaction with time is essentially driven by Yes Prep. Mastery shows a larger initial effect. At cohort two, we see a similar pattern. Obviously we don't have so much longitudinal data from that yet. This is three to four times, this effect, is three to four times the benefits of paying people.

The largest estimated benefits of paying people $3500 a semester. The intervention seem to be working partly through the mechanisms we anticipate. So a small subsample was contacted by one of the charter networks in the first cohort, for a fall term survey. They reported in the treatment condition being more likely to use academic support services, more likely to have chosen to live on campus, more than likely to have joined an extracurricular activity within this subsample.

A very small sub sample that mediated the effects. In the second partnership, this is with a university. A university known as Stanford. We delivered the intervention to 90% plus of the incoming class. And they did so through a link on the orientation website, so people who are directed through this link to an online survey, there's a control group.

One of three different treatments, the standard social belonging treatment, and then two variants. One that focused on cultural fit and one that focused on critical feedback as barriers to belonging. So, people saw this social and academic life at Stanford. What's it like to come to Stanford? You're in, you're coming, you're excited.

The primary el computed here is not persistence, but GPA. And, what we see is that, among the advantaged students. Among Asian and white continuing generation students. There's no difference between the treatment and the controlled condition, which is what we predicted. Which is what we found in all the past trials.

In the prior two years, black, Hispanic native, pacific islander, and white first generation students earned GPAs about one third of a grade point less. This was identical in the randomized control condition. All three of the treatments showed a boost and overall, if you compare just simply treatment versus control, that's a 35% reduction in the raw first year achievement gap.

The effect's essentially unchanged if you control for SAT scores and high school GPA. People also reported greater social and academic engagement. So they reported in the spring term survey, they reported being more likely to have made more close friends. To be more involved in extracurricular activities, to be more likely to use academic support services, and to be more likely to have developed a mentor relationship on campus.

Okay, just to conclude, as I began by saying, one factor that causes the reproduction of inequality in education and in society I think is psychology, how social disadvantage gets into how people think and feel about the world and ways that can reproduce inequality. Interventions like this are like engine oil.

They are not the engine, they grease a complex system, allow it to function more smoothly, in the way that it's intended. So, there's no either or here, it's really both and. Psychological interventions to be effective, so just to make that point clear, this is not evidence that we don't need support services in college.

It's not evidence that we should cut back on financial aid. We need all of those things, but we might also need to address student psychology. To be effective, these interventions have to actually address, grapple with, how students are thinking and feeling on Campus. And often that requires interdisciplinary kinds of collaborations.

Just to tell you where we're going now. We've developed a large partnership. The effectiveness of these early trials and their potential for scaling both to new students and from year to year, through the online mechanism has allowed us to create a partnership with colleges around the country to test these interventions with full cohorts of incoming students were launching right now.

The design will be a standard control condition, a standard belonging treatment and a campus specific customized treatment which is developed through on-campus focus groups and worked with students. Here are our partners from 2014 to 2018. It's a four year process. There will be two consecutive years of randomization.

The first one will be this summer. As you can see, it's a very, very diverse group of colleges and universities. And that's intentional. We want to start to understand critically, where and when with whom these interventions are more or less effective. There's also a number of other ongoing or past trials that have occurred out of CTC.

Barbara Schneider, she can state, for example, has led one in CLEP with some assistance from David Yeager and myself. Where we just have some initial data now. This summer, we anticipate enrolling about 40,000 students. And in the second year that will double. Our primary questions are of applied significance.

How much can we actually move the needle on college persistence and potentially, hopefully, ultimately, completion, through this prematriculation approach? What's the best way to create customized versions of the intervention that most address students worries and concerns? Heterogeneity, where, with whom are these purchase more and less effective? And how can we understand the relationship between psychological processes and other processes that perpetuate inequality?

There you go. I'll stop there.

>> I'm Anne Stevens, the Director of the Center for Poverty Research at UC Davis and I want to thank you for listening. The Center is one of three federally designated poverty research centers in the United States. Our mission is to facilitate non-partisan academic research on domestic poverty, to disseminate this research, and to train the next generation of poverty scholars.