Welcome. You are listening to The UC Davis Center for Poverty Research seminar series. I'm the center's director, Ann Stevens. This series brings scholars and policy experts from around the country to discuss their work on poverty, and poverty research. In February, 2013 we hosted Richard Murnane, who is Thompson Professor of Education and Society at the Harvard school of Education, and a research associate for the National Bureau of Economic Research.

His work examines how the growth in family income and equality in the U.S. has affected educational opportunities for children from low income families.
>> I'm gonna talk about this paper that I wrote for the Journal of Economic Literature. It's coming out in a few months in that journal.

It's also currently an NBR working paper, so it's available.
>> High school graduation rates. This is a quote from President Obama, from his State of the Union message in 2009 about the importance of high school graduation rates and not dropping out. Now, how do they compare to other OECD countries?

In 1965, U.S. ranked first among OECD countries. It had the highest high school graduation rate. It now is below the OECD average. And it's not that high school graduation rates in the United States have declined. I'll show you that in a minute. In fact, they've increased over the last decade for reasons I'll talk about but don't fully understand.

I don't think anyone does yet, which is an interesting aspect for new research. The real story is that in many OECD countries have increased secondary school completion rates quite dramatically over the last 20 years. Which it kind of helps refute this argument, you know, we've done all we can, we're as high as we can go, we're kind of at a plateau.

Other countries have done considerably better, in terms of increasing high school graduation rates, than the U.S. So another question is why do we care about these things? Well first increases in education attainments to the US work force have fueled economic growth, and pro, and product, and produce rising income.

The best documentation of that, in my view, is Larry Katz' and Claudia Goldin's terrific book, The Race Between Education and Technology. Well worth a careful read. The other reason that's of particular interest to me is that, you know, education is the primary mechanism of upward social mobility in the United States.

And throughout really all of the 20th century, it, it economic growth was a rising tide that in some sense lifted all boats up until about 1970. And a key reason for that was that each generation of Americans had, on average, more education than their parents. How many of you have more education than your parents?

Educational attainments. All right, it's true for me as, as as well. And there's a nice paper in this volume with our opportunity that Greg Duncan and I edited, showing that the percentage, that there really has been a decline in, in the generational upward mobility. The Rate of Upward Mobility in Educational Attainments in the United States is by Mike Hout, of Berkeley.

And so it really, so this primary mechanism of upward mobility really is threatened by the stagnation in the high school graduation rate. Scott, thank you. All right.
>> Your last live talk about graduation rates a, across countries. And so do we have a good sense if what a high school graduate is the same across countries, and is, I mean, could the mechanism be, it's getting easier to get high school diplomas in certain countries versus others?

Any thoughts or knowledge on that?
>> I don't really know, Scott. You know, I've talked to folks at OECD. Andreas Schleicher, who runs that program, you know, talks about the large amount of effort they put in in measuring these things. I don't think that's the case, but I don't know for sure.

And, and so, in particular, is it the case that they've changed the definition of high school graduation rate in particular countries, and that has contributed to this? It's a good question. I, I really don't know the answer. Okay. So one of the,

of the questions this paper addresses first of all, how do you measure high school graduation?

Turns out that's a non-trivial proposition. The second is, what are the, what are the stylized facts, so to speak? You want to explain, I want to describe six that I think are quite striking. Then how can we explain these patterns? Within the course of the question of well, what are promising strategies to increase high school graduation rates?

In other words, what's the evidence, the causal evidence on things that have been tried and to the extent to, have they made a difference. And then finally a few words on, as we'll see my answers to the fourth question about promising strategies is a pretty short list. And you, and so the question is why haven't the policy evaluations been more useful in guiding efforts to increase high school graduation rates?

I want to talk a bit about that and basically make the case that the kind of interventions that are easiest to evaluate using the quantitative methods that help one to get tenure are not the interventions that have the most promise in improving high school graduation rates. As we'll see, that's kind of it's, it's, it's a problem, I think, that we as a research community face.

I don't think that the Gates Foundation has it right, in arguing that one of the goals should be for everybody to get a four year college education. I do think that to fare well in this changing economy you're gonna, at some point in your life, need more education and training beyond high school just because the economy is changing so fast.

So I think what's really important is that you leave school with the skills to be a good learner, going down the line. And, I think, for a lot of people, you know, we don't understand, very well, community colleges. I know Mikal and others are, and Ann, are thinking about that and, and studying that, is to what extent are particular community college programs important?

I don't, I don't think we understand that very well. But at the same time, you know, and I know the work David Card's Ely lecture where if, that's where he talked about no difference between drop outs and high school. I'm gonna show you some numbers in, in a minute on wage differentials by education that make me think it's a little more complicated than that.

So how do you measure these? Well, there basically are three data sources. There are these each of which is a problem, household surveys. So basically, this is the census, the American Community Survey. Current populations survey, where they ask samples, large samples of adults, what's your highest educational attainment.

And so you can take those responses, do they say at least, a high school diploma? And of course, your question comes right, blind. Because you can't, from these household surveys, adequately distinguish GED-holders from conventional high school graduates. There is a question now, it started in 2008 in the American Community Survey, about, if you say you are just a high school graduate, with no post secondary education, they do ask you if you acquired that status by taking the GED.

But they don't ask you that question if you reported you had some post secondary education, so it's incomplete. Also, comparisons of numbers for the GED testing service aren't counts. The league wants to believe that those act, those, the, the responses to that question aren't very accurate in any case.

So that's one problem, is how do we take out the GEDs, from the household survey? Okay. I'll talk about that. The second is the so-called common core of data, you know, that the National Center of Education Statistics collects every year. The reason it comes from school, every high school is asked to report the number of individuals in each grade level, number of graduates.

That goes to the district, that goes to the state, that goes to the Feds. That is the most widely reported source of information, high school graduation rates. It's problematic for a reason, and I'll talk about it in a minute, okay? And the third are these longitudinal surveys. Now, if you're only worried about national numbers, you know, you can look at ELS 2002, NLSY 1997, or go back and look at the earlier surveys.

And I think, they're not perfect. Jim Heckman and Paul LaFontaine have a 2010 paper in The Review of Economics and Statistics that points out some of the problems with these national longitudinal data sets. But I think most people conclude, if you only want national numbers, that's the best, that's the best evidence.

And you can separate the GEDs pretty well in those data sets. The problem, of course, is you can't really go anymore to a smaller geographical unit. Now however, a new data, relatively new data source in most states are these state administrative databases that follow every student in public school longitudinally.

And the Federal government put a lot of funding to, gave a lot of funds to states to help them develop these systems. And in principle, every state in the country now has the capacity to assess to provide a number on the percentage of kids who in public school, who actually graduate.

And whether they do so in four years, five years, or six years. It turns out, I think most people thought this is gonna be the way to overcome the problems of the common core data. I don't think that's true. And I'm gonna show you why in just a minute.

There's a real Achilles heel in these. And Achilles heel comes back to, you know, the data ultimately come from schools, where, from high schools. And it, it turns out, you know, so they can count the number of graduates. I think there's, let's for a minute argue that those numbers of graduates are okay.

But the question then is how about kids who left without a high school diploma? Well, you can, in principle, say it's a dropout. Or you can say the child simply disappeared. Or you can say the child transferred. And, the incentives to count that the child transferred are very great because children who, quote, transfer are not in the denominator when you count the high school graduation rate.

And we've got some data that I can show you if you want. I don't have it, it's a slide I've hidden. But basically when you look at urban schools in Massachusetts, you see the percentage of kids who, quote, are counted as transfers relative to those who are counted as dropouts or disappeared, is vastly higher than it is in suburban schools, looking at the ratios.

So I think the problem is- So the, the, the federal rules are you're not supposed to count a child as transferred unless you have document, written documentation about where the child went. Now if the child went to another public school, you could in fact follow them and find them, in principle.

But if they go to a private school or they go out of the state, you're lost. And I think what, our inference we make for Massachusetts data is the definition of written documentation is very vague. So let me so what are the problems? Why does it turn out to be to hard to match school graduation rates?

The real problem is these atypical paths through high school. Kids change schools, students being retained in grade. A in particular the percentage of kids retained in ninth grade has grown enormously in this country. And immigration of teenagers, you know. How, what do you do about them, how do you count them?

Some of them go to American High School, some of them don't. So it, and that's a real problem when you're looking at the household surveys. If you count recent immigrants, they may never have gone to high school in the United States. Do you wanna- So do you wanna count them in high school graduation rates?

Well, it depends what your purpose in counting the graduation rates is. If you want it, looking at evidence on, as evidence on whether American high schools are doing a good job, you probably will wanna take 'em out. If you're looking about attributes of the labor force, you probably don't wanna take 'em out.

Okay, this is a chart that has way too many numbers on it. But let me just point out a couple of things. I, so I know it's, it's a bit too hard for most of you to see. What this is is, this is for kids who entered a Massachusetts public high school in the fall of 2005.

And then the question is what happened to those kids over the next six years? Other words, we looked in 2012, so they were, they had at least six years to graduate. And we said, what happened to those kids? And so, one possibility, they could've graduated on time in four years.

Another is, they could've graduated, but it took them five years. Another is, they could've graduated, but it took them six years. Another is, they dropped out and there was clear evidence in the exit codes, they're dropouts. There is, they're reported as transfers, that is they left the Massachusetts Public high school and did not go to another Massachusetts public high school, but the, at the school level.

They reported to have, transferred meaning they went to a private school or they went to school outside the state. Okay? So that's transferred, unknown is that they simply disappeared from the database, and, without, without an exit code. They just didn't come to school, one day, and But without ever providing information to know what happened to them.

The last is, this is the US Government's definition of high school graduation rate found using their rules and the key there is graduation rate in four years but importantly, eliminating transfers from the denominator. Just a couple of points for all those nebus word that are worth pointing out.

One is, if you look, for example, at black males, you see, so 55 in Massachusetts, 56% of them are graduating in four years. But notice there's another six and a half, 6.3% that are graduating in more than four years. So and, and the point is, if you are looking at black, white gaps in high school graduation rates or Hispanic white gap.

The size of those gaps really depends upon on how long you give kids to graduate. So four year graduation rates are gonna be much bigger gap than six year. And of the things, I think is a little crazy is that. You know, the rules that the Federal Government is laying out for how states are supposed to report high school graduation rates is it's supposed to report four year graduation rates.

So, at the same time we've got increasing standards highschool graduation rates, 75% of the kids in the country have to take have to take exit exams. So they're raising standards for high school graduation and they're also saying all kids have to take these exit exams to graduate, but we're saying, what really matters is that you graduate in four years.

And this is really, I think, problematic cuz in a lot of the urban high school folks we've talked to. You know, they say, you know, if we take kids who come in reading in ninth grade reading at fifth grade levels we say, look, if you stick with us for five or six years, we'll help you to learn these skills to graduate, but it's gonna take five or six years.

It's a little odd to think about having an accountability system that says four years. So another pattern here. So that's the first issue is black, white Tesco gabs, Systemic Tesco gaps are going to bigger when you look at CCD data on four year graduation rates. When they are, when you look at household data, I'll say 20 year old's, where they have more time to graduate.

The second thing is, notice these transfer rates. So far Hispanics you've got 16.3% and notice its very very high, so how you, what you do with those folks who count as transfers? Whether you put them in the denominator or not, has a very big impact on the high school graduation rate for a particular Hispanic into a lesser extent blacks.

So again, I think the big story is an awful lot of kids a simply dropping out and there'll be counting as transfers. I mean, that's the and you know you can think of on where do you wanna put a, an auditor every urban school, the cost of trying to get more compliance in the directive is going to be very, very high.

It's the, the rules that are layed out in this 29, 30 page 2008 federal guidelines are that the receiving school. It has to include the receiving public school. It has to include the child as their client. So in other words, and that's true even if the child we're to transfer in the second semester of the 12th grade.

So, that's, that's the rule that they're supposed to follow, okay?
>> One small thing that you may get to later. But I'm curious if, later you're gonna talk about whether the, whether we

can give out an on time, or a five year or six year. How many are, is sort of leaving before the end of fourth year.

Like, they are not present versus not completing the exit exam. So if you could get drop outs as either to stop showing up or are they not getting their diploma because they're failing to
>> Well, in Boston, I met the Superintendent, Carl Johnson, has told me 40% of the drop outs have passed the exit exam, the 10th grade exit exams, so that's Boston, so I don't know beyond that.

>> So a very crude measure would be just simply if you had a good measure of the number of high school graduates to divide that by the number of kids who were in school 4 years earlier So it's not perfect. But given all these problems here, it might be better-

>> Well, that's just what the comment, that's just what the, until fairly recently until 2006. That's exactly what NCES did. There's a nice group of graduation rates. And am I going to show you why they, Yes, I am going to show you in a couple minutes, a problem with that.

Okay. so, so, so the first kind of problem with this is that we saw kids have these funny paths through high school that creates difficulties in in measuring high schoolers But that's not gonna issue brought up earlier is this GED the percentage of high school completers that is reported in household surveys as high school completers who are GED recipients is up around 12%.

It's 15% among African Americans in so it's substance. So how you treat GED recipients has a nontrivial impact on your estimate, particularly for particular subgroups. And again, the reason not to come to the high school graduation raises as you know from work that Jim Heckland and co-authors has done and we've done some as well is GED recipients don't fare nearly as well as high school graduates in labor markets.

And the explanation for that, is quite interesting. It is not that they have lower cognizant skills then terminal high school graduates. I mean, highschool graduates who don't go onto college. In fact, you look at the distributions. We've done this is Massachusetts of cognizant skills of terminal high school graduates and GED recipients, they map right on top of each other.

But, if you look at eight grade school attendance records. The recipients are, much more likely to have been absent. So the real problem is, and the reason that GED recipient don't fare very well is you know they, they, they have dropped out of school, employers know that. Employers experience, you know, when you think you are hiring somebody for an entry level job, what are you most.

What's the person you most want? Come to work everyday, on time, right? And here you've got evidence that, people weren't very good at that. At least when, at least a few years ago. So that's, I think it's this differences in these, what Jim calls Jim Heckland calls noncogntive skills, Our friend Larry Cass doesn't like that term, cuz he points out, you know, it's all going through the, brain in some sense, right?

But, all you could, you know, so you need perhaps another term, but. Okay, so, you really, if you're gonna use the, household survey to measure high school graduation rates, you really wanna take out the GEDs and we've done that. We were able to get GED testing service to give us, information for the last ten years on everybody who got a GED in this country, and we know what state and we know the demographics.

So, consequently we can provide length demographic groups. We can subtract off the number of GED who went to African American male or age in a particular state or for any other group. So, that's what've being done is how to get our estimates for high school graduates rates. Okay.

now, what are the, what are the stylized facts? You know, the first is stagnation from 1970 to 2000. The paper describes that very nicely. The the second is, in this, is this increased high school graduation rate between 2000 and 2010. And that's a really quite striking pattern as I'll show you in a minute, the third is big racial gaps, and, that I think

I'll highly publicize, less well publicized but equally true of these gaps by family income.

Just huge. Okay. And you put these three together, and what do you see? And this is, this is what you, So these are these are Hispanics, these are African Americans, and these are non Hispanic whites. And notice the remarkable, stability, and this is by, cohort birth year. So you could add 18, if you wanted to look at expected high school graduate, high school graduation year.

You see remarkable stability, you see the rate gaps. Which, it, this really. Yeah. And then, you see this quite substantial increase in the last decade. The NCES just, Reported an increase, based on common core data, just two weeks ago. And, And, some people commenting on this said, oh, that's the risk, that's the effect of the recession.

No job. But notice, that doesn't work, right. In terms of the timing, cause notice, the recession's 2007 and this, these are - You can think of this as being 2010 in terms cuz it comes from American community survey data. And, so, basically, the increase started well before the recession was beginning at the end of 2007.

Tory?
>> It's not the ACS, is it? I mean, it looks like it's precisely at the moment where the data source switches to the ACS in 2000. Do I have that right? In terms of what's your first ACS year generating that date?
>> Let me, let me think about that.

Yeah. I, I, I, you're right. All these data points, are ACS, but, I had an answer to that question because I did think of that, Part of the answer is you see the increase in other data sets. I think it's reasonable to question the common core data. But you see it in those data as well.

So that, that you really see it from two independent data sources. Also we can match up. There is a there was a, an ACS trial data set from the year 2000. And, and we and others have compared that to the census numbers. And, and, and their pretty right on the money.

So I don't think it's ACS, but it's a, it's a good possibility. So so, so we got three stylized facts. The fourth one is this wide gender gap, favoring females of the Golden Coast book pointer. This is not a new phenomenon. In 1920, for a high school graduate ratio of females was 7% higher than males, 1920.

1950 it was a 5% higher, but interesting enough, in 1970, they were dead even. And now it's increased again. And it, and it, you know, and of course an interesting question is why? And there's an interesting paper by Marianne Bertrand, and one of her students, Jessica Pan, in the Market Economic Journal Applied, just to, it's 2013.

It's called the trouble with boys. It's got some interesting data that begins to shed light on this gender gap, which you also see in college graduation rates, not surprisingly. So the last two things are, that are, the dropout rate appears to be concentrated in a relatively small minority of high schools.

About 58% of the nation's high schools. And this appears to be great variation across states. Variation that you can't explain in, not even half of it by differences in racial ethnic mix. Now, these come from CCD data cuz that's the only real, currently the only source of data by state.

So, where- - I, i'm not, a hundred percent sure of the quality of these data. We're trying to generate, state by state estimates, based upon the ACS. And so I'll know more about that soon. Cassie?
>> I'm thinking about this idea that is the, The, the forms, rather than some kind of societal trend type thing, and obviously-

-
>> Well, I haven't said that, right?
>> Well, no, but you said that, that it's the CES, the people who were quoted
>> Right.
>> So I'm thinking about how about the private school. Do you see similar trends from the private school

>> That's a, terrific idea, terrific idea.

The only, the problem with that is. The, the, it's a good idea. Let me, just writing down,
>> You get a gold star. The, the only, the only qualification that I make is based upon the ELS 2002 longitudinal survey, the high school graduation rates of kids in private schools is 97%.

So there's not a lot of room to move. But it's worth looking at from earlier survey. That's a nice idea. So I'm not sure about these. Heather?
>> I was just hoping you could say something about the change and in the, racial gap in graduation rates.
>> Yeah.

>> Looks like Adam's too.
>> You, you bet. It, it, it did. And that's in fact you know, kinda. I'm gonna end the last slide that I've got is kind of, is, is a list of four questions that I think wanna pro, provide the agenda for at least my groups.

Next steps on this research and, interestingly though, you see, you're actually right. The Black White gaps and the Hispanic White gaps have closed somewhat. You see that in ACS data you don't. See it in the common core data. And I think the there are two reasons for this.

One reason is the common core data are only counting four-year graduation rates. And we saw that a significant number of blacks and Hispanics are taking longer than four.
>> Right.
>> The other thing is that following the We use, what we did, we began with taking the numbers and, being sure we could, in fact, implement their methodology and get exactly the same numbers.

Then we updated it, and then we used the, the, to follow their exact methods in the ACS. One, one thing they do is they exclude our recent immigrants from the analytic samples. So, anybody who came to the U.S. after the age of 11 are excluded. The idea being that they wanted to focus on, what's happening with some sensibility word of High School's to get kids through.

A lot of these kids, you know, about. So, three out of five, immigrants, who came to the age of the U.S., after the age of 11, are Hispanic. And among those, age 20 to 24, in 2010. Of those recent Hispanic immigrants, only less than half have a high school diploma.

Now, whether came to an American high school and didn't graduate or whether they never went to an American high school, you don't know from the ACS but, but the point is it makes a big difference because if you include those. It's going to affect graduation rates in California, in Texas, New Mexico, and Arizona a lot.

>> This narrowing is in levels. But, if you think of it in proportion of people who drop out and the percentage change in that, then. It's much simpler. It's roughly about 25 percent improvement in the drop out rate. It's a little bit more still for the minorities. If you just view this as pool at risk people in our region.

So, 18 to 25% of them, and in this simple.
>> Okay, fair enough. So so we've gotten up to here, I think. So these are the patterns, and I want to turn to What are the explanations for these? You know, my training is in economics and this paper was written for an economics journal, so it won't surprise you that I focus on the economic the kinds of variables that economists think about.

And first, you know, what's the payoff type of graduation this is gonna come back to your question there. The second is the opportunity cost. And this, some of you may know this early work by Dan Black and his colleagues. Very nice where they looked at the, the coal boom in western Pennsylvania in the 1970s.

And then that affect is the coal boom led to a significant increase in high school graduate, high school dropout rate

because there were good high paying jobs. Then when the cold boom turned to a cold bust the drop out rate declined. So, there is evidence from other people's work.

Whether that plays a role here, I don't think so in these recent trends. So third is the rate of time discount. You know again, since this basically is how patient are you? So, it might be that this good economic payment, in terms of life time income streams to getting a high school diploma but if it means.

You have to go to school now instead of working for pay now, and if you are a very impatient person, you might decide that I value the income now than in, in the future. So questions of that play a role. And, and after thinking about this over and over again, I've fine, it, I, I was reminded of a paper in geo economic literature by, Becker and someone else from about year 2000 pointing out that in some sense.

Rates of time discount are endogenous to use a kind of economics term; that is they're influenced by a variety of things including the way children are growing up. In fact, we have increasing evidence on early childhood experiences in, affecting kids. Patient is set, affecting a whole variety of kids personality characteristics.

So, in some sense that's not a separate variable, I think, in economic terms in this context. And the last current term is this non monetary cost of completing another year of high school. Now that turns out to be quite important in this story. Now, if, if I were trained in sociology I would be breaking up this forth one into about a whole bunch of different sub categories beause this is, you know, peer groups, school culture, all kinds of things that are out of the realm of sociologists.

A lot of that work. But I put it into one category. Okay, so what, what's the evidence here? From the predictive payoff, if we simply look at this is current population distributed data. And if we simply look at what are the constant dollar trends in mean hourly wages for high school drop outs, high school graduates, and four year college graduates, we see in fact if you look very, very closely, this is a spec wider than that but not much, it's a bit wider than that for the females but it looks as if.

The pay-off to high school surely didn't decline, and it seems quite substantial. So, this is kind of partly response to the question of whether, you know, you. If high school graduates are completely interchangeable with dropouts, you wouldn't see this pattern, I don't think. Then if you look is changed in the last 30 years.

Then there is a significant change in the position of colleagues but not
>> Fair enough, I agree with that. For males. yeah.
>> If you put in a fourth one which was from the some college group, cuz you were talking about, it's not access to a college degree but maybe a little additional training.

Do you see anything
>> Not much, but again, the trouble, particularly since they changed the census, in 93 I think it is or. So, there's this problem of what do we mean. So, I agree, it's interesting, I thought about that but I couldn't figure out a definition that I found comparable.

Now, what about if you break it out by ah,race ethnicity and basically what you see here, so these are racial high school drop outs high school graduate mean hourly wage. And with the exception of this odd pattern for, hispanic males, notice for all the others, is downward sloping.

So, although high school graduates didn't do wonderfully between 1980 and 2008, the relative, wage of high school graduates, relative to dropouts. Was better, there was dropout, the ratio of dropouts rates, to high school graduate rates, to climb, for all male, for all female groups, and for all males, except for the Hispanics.

Now. So, when you look at that you might say, gee it it doesn't seem, if we want to explain this stagnation high school graduation rates. From these data, it looks as if gee, it looks as if there was a, a pretty good return to graduating from high school.

So, maybe we should look a little further. Now, one tory you might say, you're only in the sample from which these numbers are generated if you're working. This is always the question, you know economists worry about. With selection bias out of the labor market, and we know, in fact, that the employment to population ratio for drop-outs has declined.

Enormously, particularly for males. And if we looked at black males it would be even more precipitous. So, the question, this is a point, you know again Jim Heckman has made is, you know, you might think there really is, when we look at this prior picture, these are averages.

But it might very well be that for kids who are entering high school with pretty weak skills there may not be this kind of pay off and that's why they drop out. So that's the, the possibility, but then you gotta ask the question. How do, you have the one literature that says, you know, heterogeneous payoffs, the high school diploma.

That it's not going to be much benefit for kids who have very weak skills. That's one story. But then you have this so called compulsory schooling studies that at least the economics among you, know you know, there's, there are several done. And think with those studies in which researches used changes in, in school leaving requirements.

Typically, states or whole countries increase the number of years of schooling. Increase the minimum age got to attain before you could legally leave school. So they use that as a, as a kind of source of, of variation to ask this question does completing another year of school buy you anything?

And of course, that's the, the methodology they use is focusing on this kids who are right on the margin. Who would of like to have dropped out. And the pay off to that is actually school, is remarkably consistent. If I should tem some extra earnings across this things.

So you got a study the exam.
>> Studies are based on variations. Children significantly, was a long time ago.
>> Yes, Phil has one.
>> Phil has one.
>> In, in the book by
>> Phil has one using more recent.
>> Yes.
>> I don't remember enough about that one.

Soon as NB all volume, edited by the health guide at MIT. Thank you.
>> Based on variation in
>> Fair enough
>> Could be there are differences in those returns.
>> So, I think the. Let me ask, how many of you know what instrumental variables are? Okay. All right?

Some, but not, not, not all the graduates, okay? So this is, this is all, this is.
>> Ask again, I didn't look to see.
>> People over there tend to raise their hand.
>> I see. Once again.
>> So, so. So, here's the story. The records. So, he.

The question is, can you fit together the finding of the Kaposkaby-Struley studies and? And, if we believe Phil's recent study, I fit that together with Jim Heckman's idea that, really the kids, who are coming to school, coming to high school. Not really with very good solid core value skills that high school diploma might not buy you much and I, and this story I think is, and this is an inside Kevin Lang, as a typically labor economist that provided is.

But think about what the instrumental variables for how it works. Is you're, you're using the instrument, the change in the, in, in the schooling age to predict number of years of completed schooling. And you get in that, that you then use to predict subsequent wages. Well, the striking thing is that for a lot of kids, increasingly in recent years, staying in

school another year does not lead to another year of completed schooling.

And you see this, so as a a result of which they're not, they're not influenced, and you see this if you look carefully at Phil's most recent paper, and you look at the coefficient on. In, in the appendix to that paper in the book, the first stage equation, you don't get a statistically significant impact for blacks.

So, for blacks, the, the rule that you have to stay in school for another year did not lead to a, I think, an increase in the number of years of schooling completed. So you see this looking at. This is Massachusetts data. So this is the percentage of Massachusetts first time ninth graders who repeated grade nine and notice, they're in low income.

More than one in four kids are repeating grade nine. They ask the question, among those who repeated grade nine. What percentage of them graduate within six years? And, what you see is for urban low income it's 30%. So, in some sense, failing to get out of grade nine in one year means for a lot of these kids, they're not going to graduate from high school.

We do know from the Nate transcript studies, that kids are taking more science and more math now than they were 30 years ago. But that doesn't. Question is what's in those courses? And, and now I think it's more difficult to define. So, I don't know the answer beyond number of courses, that's a good, that's a good point.

Now so Explain the increase I gave a talk I guess at the New York Fed about a year ago and an economist name George Devroy who has written some, does some interesting work on high school graduation rates, he pointed out, well you know. If this is real. If it's not the AC.

If it's not Hillary's ACS problem. If it's real, then shouldn't you see this in, increase in massive educational progress? Eighth grade scores at the bottom of the distribution.
>> Yes.
>> That is, we know eighth grade test scores are pretty good predictors of high-school graduation rates. So, if this is real, shouldn't we be seeing an increase in the eighth grade nape scores, and it turns out you do.

So, this is Math, and this is reading. This is 25th percentile, so we haven't done all the quantile work that you and Mary Ann have done Hilary, but we've done a little bit, looking at, so if you look at the 10th percentile you see the same thing. Why look at the bottom distribution?

Because they are, of course, the kids who are most likely not to graduate. And you see in math, these are not Hispanic whites, these are blacks and Hispanics and the 25th percentile, and we see beginning about the late 1990's substantial increase. And for reading it's a bit more complicated cuz you get this big decline in reading scores.

Particularly for black, but you do get an increase starting at about 1995 and that doesn't tell you of course but the same question is why the increase in high school graduation rate, well why the increase in these 8th grade test scores. And we still don't know the answer, but at least it's somewhat consoling, I hope.

>> 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.

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