

Welcome. You are listening to a UC Davis Center for Poverty Research conference podcast. I am the center's Deputy Director, Mary Ann Page. In January 2014, the center hosted the War On Poverty conference. The conference hosted top poverty experts from across the country to discuss the U.S. safety net on the 50 year anniversary of the War On Poverty.

In this presentation Douglas Miller discusses research on head start and evaluates some recent study findings. Miller is an Associate Professor of Economics at the University of California, Davis, a Faculty Affiliate of the UC Davis Center for Poverty Research, and a Faculty Research Fellow for the National Bureau of Economic Research.

>> This talk is comprised of, of a three point agenda. The three points agenda are to talk a little about the history of Head Start, at least some excerpts from the history of Head Start, and about the history of debates and puzzles surrounding Head Start. Talk a little bit about what we know, and why we know so little about the long run effectiveness of Head Start.

And then to offer a I don't have results, but I have a preview or an advertisement of ongoing work that's been going on. These first two bullet points derive from work that I've done with Jens Ludwig and Chloe Gibbs who's here. And the third bullet point derives from work that I've done with a team of stellar graduate and undergraduate.

Students here at UC Davis. So I'm gonna get excited to share all of that with you and and so without further ado.

>> We all know and love Head Start.

>> Now, given that, I'm not gonna do the sort of basic core history. I just wanna tell a few anecdotes or stories that help, might provide a little bit of color about the program.

First, it was the, this conference was timed to be 50 years from the big speech. It was not in the speech. It was just not in the speech. It was its, its existence is possibly due to an accidental convergence of three different things. First of all, the Community Action Program, the core part of OEO was starting to spend some money at organizing communities.

This was causing problems for local power structures. Word was getting around to mayors this is some federal money you don't want, and Sergeant Shriver was having trouble spending the money. And so they were like, well, what can we spend money on? He had his research team say give me a big picture of research.

Maybe they made a pie chart or something, cuz he said I saw the chart and I saw how many these poor people were kids, I almost fell out of my chair. So they knew they had to do something for kids. Two was Sergeant Shriver was married to Eunice Kennedy Shriver, who was the next sister in line after Rosemary Kennedy, Kennedy, Rosemary Kennedy had some sort of mental delay, de, developmental delay, mental disabilities.

It's not totally clear yet. I don't know the Kennedy history fully, but that. But Kennedy's attention on mental retardation is, is, President Kennedy had the Presidential Commission on Mental Retardation in which Eunice Kennedy Shriver, Sergeant Shriver's wife was the, the unofficial head of that commission, and through that they started learning about patterns.

In what we would today call socio-economic disparities in cognitive functioning, what they then called cultural backwardness and mental retardation. And they started to learn about the environmental influences in the earlier years of, of schooling and that was also part of what led to thinking about Head Start as an intervention that could be a work.

And then finally there was sort of you know politics and Olio didn't wanna lose out that chance for the funding of this, this early kids intervention, so that was part of the history. This happened all the last minute this January 65 with intent to have 100,000 kids by the summer 65, they got called project, rush, rush, so here's one antidote about that.

Sergent Shriver took it to Johnson to approve, Johnson said okay go for it. So then he calls the basically like the head of Head Start Jules Sugarman, he wasn't the actual head, but like the COO head. And he said, and Sergeant Shiver

said how much it gonna cost?

And Johnson said well we don't really know, we have to look into that some more, and Shiver said it's fine you have half an hour. Dean Sugarman took all process, so me and another guy went across the way, it took an hour and a ham sandwich in a hotel and we're back of the envelope calculation found to be \$180 a kid for nine week program.

So he call Sergeant Shiver back and then the, the White House, imagine press office like \$180 a kid, and then when the other proposal are coming in, eventually people ask about this program and he said oh yeah, we can do this for \$180 a kid. And so that's basically how we had set to determine the program to start often, so we, so we tap our back and said here is the calculation policy relevant one.

Okay, let me think what's next here. So the only other thing that is going to be relevant for this story is that this federal money but administered locally, local programs. So that's gonna, that's gonna play a role later on. The other way to think about Head Start history, is think about the money and people.

So here's the, the money over it's history, and then here's the people. Start off more people, cuz it was a summer program and then. Here's this growth, and I like, and, and, you can think of this story in four parts. Basically sort of wild West, or wild South in early implementation.

A period of relative stability, big growth, and then another little bit more period of stability. Throughout one thing that's constant of this is a huge perceived success. So this, this one book I was reading starts on page one. I wrote why was Head Start such a success a reporter recently asked me, and why is the rest of the property a failure?

So that was a, a book from about this era. A national representative state from this area said that they had a 92% approval rating for Head Start. And you can come up with lots of antidotes. So why is this is perceived as such a success? I think that there's probably a, is a, as a special combination of fairness and efficiency.

So you know, one of the things with which economists can hold true and dear to our hearts is the fundamental issue of trade offs of opportunity costs. But also sort of big in contrast to babies. Growing into the prison hood, I and the eyes of people outside of their own family in ways that you could empathy things that really do have to have to be going on.

So we just one, one sense of this sort of fairness aspect of it. This sort of power was not lost on OEO. In fact that was part of why Sergeant Shriver was excited to have this in community action programs. This was getting a bad name. You put the cute kids in and now it doesn't have a bad name right?

So here for instance is, I don't have a presidential picture, but here's a first lady. This is Lady Bird Johnson meeting with Head Start kids in the early 60s. And and then one of the small themes of this talk is, the more things change the more they stay the same.

Here's Michelle Obama with the same smile meeting with these kids. So, so.

>> Same scarf.

>> With the same scarf, yes.

>> Now some things, some things have changed. The healthy snack today, you can't quite tell very clearly, but it's raw broccoli and bread rolls, whereas in the 1960s it appears to be raw ground beef.

So. So some things have changed. Okay, so there's also efficiency aspects of Head Start. The efficiency aspects come from thinking about the, the real investments in early childhood leading to long run benefits. So we can just throw, we can use terms like neural plasticity, dynamic complementarianism, or learning the technology of skill formation.

My co-author wrote in another papers says, well, we think this passes a benefit cost test. So that's, that's the efficiency. That's that we have it, we have our equity and we have our efficiency, too. Okay. The title of this talk is Long Run Puzzles in Head Start Research.

And I mean that title in two ways. One way is that some of these puzzle, debates about Head Start have been going on for a long time. There's some recurring themes that happen, from the very beginning of the program up to today are. Well, does the program work?

Does it do what we want it to do? And, related to that is the ongoing question of test score fade out where we find test score positive impacts at Head Start that then fade out to zero. So, that's one recurring theme. Related to that is the policy question of should this program be expanded, strangled, fundamentally changed or, or what?

If we're gonna do more, do we wanna have just more kids or do we wanna be changing the resource intensity of the program is another debate? And then similarly even separate from dollars, do we wanna be having the focus be a, a pre-academic or academic skills or do we wanna have the focus be a whole child skill.

So these are themes that recur throughout the history of the Head Start debates. And that's one sense. Let me just think about one example of oh, the test score fade out. I'm gonna talk a little bit more but 1965 the head of OEO says to the Sergeant Sugarman the same guy that had to do the \$180 estimate.

He said Sergeant Shriver says now, I wanna prove this program is valuable. In fact I want to say how many IQ points, are gained for every dollar invested? Right, and Sugarman says sorry that's, that's only part of what head start is about and, he says sorry I wanna it done.

Right, so that's, that's, that's the pre-cursor for for, for thinking about sort of the academic versus whole child and, and doesn't work question. And we'll see that pre-cursor through today. Okay the other meaning of the title of this talk Long Run Puzzles in Head Start Research. Just what the heck is the Long Run Impact?

We really wanna know, that's the question that we care about in terms of the, this program and it's a key question, but it's a hard question, and it's a hard question because of three reasons. Which are pretty well know, but let me, let me refresh us on those reasons.

These hard to measure the short run impact. Which is that fundamentally it's a perennial challenge of identifying any sort of causal effect in non-experimental settings. Which is the people that don't go to Head Start are, are poor comparisons for the people that do attend Head Start. Those who don't sign up don't tell us very much about those who do sign up, and what they're kind of actually be different, because to attend Head Start, you need to be poor enough, you, your, your parents need to have the sort of wherewithal to try to get you to sign up.

They may need to have the flexible job schedules so that you, that they can conform with the hours of Head Start availability. And so all of those things may be different. And all of those things may in turn affect our long term causal effects. So how wha, you know, how we might usually think about dealing with this issue is that, is that thinking about trying to find an experiment which we have one very recently or absent that, finding one that mirrors an experiment.

One way to think about that sort of quasi-experimental strategy is, is based on the following. These variables, which are problematic in being able to measure Head Start, we might think of this as being about the demand for Head Start. So does my, does my parent want me to go there or not?

But if we could identify a supply shop to Head Start, then we could use that to find kids who are otherwise observationally com, comparable, and then, but one of whom, because of the supply shop, is able to get Head Start, and use that to look at the impacts.

So that would be the standard, the standard sort of approach. I'm gonna, and I'm gonna tell you a little bit about what we know from that, that sort of thing. Yeah. A little bit later. Okay, so that's, that's the short run difficulty and how we might approach it.

The, the long run is even harder to measure, because you're starting off with the same problem as the short run effect. But then, there's two additional difficulties. I think both of these additional difficulties actually are things, themes that

have resonated throughout the conference and the different programs we've been assessing through the conference.

One of them is just, the data problems are harder. It's harder to find data where you can look at exposure when you're young, out comes who, when the long run has come around for you and with additionally sort of enable the abilities, you know, quasi experimental lessons. That just sort of.

Takes your difficulty and squares it, okay. In addition, there's another challenge. The additional challenge is a challenge that I think of external validity issues. Any estimate that we can get is gonna be a valid estimate, that speaks to the population of kids for that study. The program as it was enacted in that time.

The counterfactual opportunity for those kids where they stay at home, where they go to another daycare setting, or the like of that time. Because we're interested in long run impacts, we can at best measure the impacts of the population program and alternatives from a long time ago.

Absence science fiction time travel, right? So so at best we can, what that means is, at best we can get the question we want for the population that we are not that interested in, right? So, that's tough, that's just tough so, so here's what I think as the approach of the ideal situation for this might go.

Let's start with what we can do, what could ideally at best do, which is identify the long-run impact from earlier cohorts. Let's see if we can also for those cohorts identify short-run outcomes, that might be sort of along the causal pathway for those long-run outcomes. This is sort of like in medicine, they have intermediate clinical endpoints.

And ultimate clinical endpoints. So, for instance, an immediate clinical endpoint might be blood pressure or cholesterol level. When I give talks that intermediate clinical endpoint of blood pressure is not doing so good, right? The ultimate clinical endpoint might be cardiovascular mortality. We wanna think about the analog. Who, wh, I'm sorry, I don't mean to bring it that close to home there.

But we need to think about the analogs, for, for this in the context of, of to determine some long run outcomes for, for this for exposure of this program. And additionally we want to build the long run and short run or intermediate clinical endpoints are the ones that we should be tracking.

And that lets us know which ones we should be looking at today, in order to project what the, what the long run impacts of today's program might be. That's, that's, that's the, that's the the model for how the research endeavor might go. And, as you can expect and so, we're a long ways off from meeting the promise of that model.

But let's, let's start with what we can, okay. What we can, so let me tell you a little bit about the best direct measures of long run impacts that we have of Head Start. I think there is probably two types of best available direct measures of long line impacts, one type is based on sibling comparisons, two, to family who are one child went to Head Start and one child did not.

These are it's really a shame Janet Curing couldn't be here today because this is really pioneered by Janet Curing, in conjunction with Duncan Thomas and in one of the papers Ariana Garcias. And one using the National Survey of Youth and then followed up by the David Deming. And that's where the long run outcomes in.

And the other using panel study of income dynamics. So that's one type of best available evidence we have on long run impact, and I'm gonna give you some more details about the type of evidence that is found in that in just a minute. The others is a paper that, that I wrote in, in c, in conjunction with Yangs Littlewig and that's using one of these supply shops that I alluded to earlier.

Where in the early years of the Head Start program we can identify county by county. Some counties got a, basically get an extra supply shock of Head Start, due to quirk in the, in the initial roll out of Head Start. We can find sets of counties that are, that are otherwise comparable, but where one got more Head Start, and one got less.

And we try to use that as a, as a way to measure the impact. So, I'm gonna give you a sense of the flavor of these two

types of studies. Here's, here is from, from the Garson Thomas, and Curry study looking at PSID data where they can actually track kids over a long time, and they can find siblings, one of whom went to Head Start, and one of whom didn't, and track them into their early adulthood and their 20s.

And so I'm gonna show you coefficients on three outcomes. One is, did the child graduate from high school? One is, did the child attend some college? Each results gonna be for different aggression, and so let me just show that to you. Cuz everybody pulled African-American kids only, and white kids only, so let me just pop focus on this.

In, in, in this sort of comparison we can see that the findings are that, if you look at siblings. The child that got Head Start exposure was 20% points more likely to have graduated from high school. Then the child that didn't within that family. And they would rule out the effect, zero effects for, for that.

And then similarly, there's increase in college going, and that, those educational impacts were not found in that study. This is, mind you, a study, this is a study from, from about a decade, or so ago using data from about 15 or so years ago. And this is not my own work, I just want to make sure I'm, sort of, this is the Lit review part here, I guess.

These findings were not found for African-American kids although there was a, a large and statistically significant reduction in having been booked or charged for some crime. So in some sense, this paper which is one of the main planks, these are, this is probably the key results of, of those main planks.

So that's one flavor of the sibling comparison literature. The other main literature is, well, the, a, another main plank is my paper with Yens. And what there was a, a grant writing assistance for Head Start that some counties got that other similar counties didn't get. And we showed that that translates into extra dollars per kid of 50 to 100% more Head Start resources per kid in those counties that got the assistance.

Which in turn led to more schooling attainment, maybe about a half year of achieved attainment. Maybe about two to three percentage points increasing in, in, attending college, which is about 15% of the controlled mean and a reduction in child mortality. Okay so, there, here's a picture of the reduction in child mortality where these are the poor counties that got the assistance and had more mortality, and these are the counties that didn't get the assistance that had higher mortality.

So oh there's a third plank here which is not yet a public about a half year ago in this room Rucker Johnson came in and presented what I would say was a promising in progress research. Again using the PSID and linking it to some county or funding data related to the data that Mather talked about this morning and I'm about to talk about it in a few minutes.

And he found beneficial effects on schooling, wages, incarceration and health. So the optimist to take on all of this can be drawn from a record sides, which is to say he says look we've estimated long term benefits or previous cohorts. From three separate research designs, and from three separate data sets and in fact may be five separate data sets when you add, when you add them all together.

So that's the, that's the take. So is there concerns on Head Start's effectiveness, no, no. Here's, here's the early part of that non-consensus from 1969, I should say oh, let me take a step back, I'm sorry. The first reported reports of test square fate, problematic test cost fate was in 1966 which is to say, one year after, the first program was, was about the first time you could measure fate out, the, the, that was, that was some New York City program.

So this, this is coming at page eight of one of the New York Times in 1969, in the wake of the first national representatives study, holds out that people found no better study program, its not worth the cost in its presence form, right? So that's, that's from a long time ago, here's from a recent thing couple years ago an article appropriately titled Timed Acts Public Program That Don't Yield Results.

In which he says that industrial evidence that simply doesn't work, he says a further funding is criminal oil companys, right? That, that so we do not have a concesus here, I was saying, in todays New York Time, David Brucke says yet, yet, no, no. Oh, I can't do it.

He says. He says. He's gotta sort of let. So you know everything doesn't work on the left or the right. He says conservative programs like Urban Enterprise Zones failed to produce measurable results. Liberal programs like Head Starts scarcely produce identifiable longtime gains, long term gains. Okay, so now I need to get back to my slides here.

And is this gonna okay, great. Oh no. No presentation. Okay, great. So, we've seen the optimistic take based on long run impacts. We've seen a pessimistic take based on test score fate. Oh, I wanna to say one more thing about that test score fate. That, that, that this.

Very negative assessment of Head Start was based on the results of the National Head Start interview impact survey which was also national representative, and was a good standard in terms of, of assessing causal impacts. It was based on randomized, randomized assignment to Head Start versus non-Head Start and so.

So, so there's some evidentiary bases for those, for that fade out. Test score fade out is, is a relatively strong evidentiary basis. Okay, so, we have some optimistic takes, and some pessimistic takes. The optimists have a rejoinder. They have a couple rejoinders. Rejoinder one is, this fade out that we're so concerned about was present even in the cohorts for whom we saw long run impacts.

So, David Dermings paper for kids, test score gains, fade out long gain benefits. And so we think that there maybe that as those cohorts experience fade out, but also long run gains. Additionally, other programs targeted at the same ages, like the Perry Preschool Program and. I forget if it's smaller class size or better teachers in the Tennessee Star Program.

Found test score gains, then test score fade outs and long run benefits. So, so maybe that's not so damning as we would, as we would originally be concerned. Separately, the optimistic return in number two is maybe we can find other mechanisms where we actually find effects. So. Hillary and co-author of using that experiment that found.

These experiment, NHSA experiment. Found increases in parent involvement with kids. Hillary and co-authors had been maybe finding some impacts on sub-group selection. I think I misunderstood. Oh, for Spanish speaking kids they find impacts that persist. Right, so, so, so people can find some mechanisms when maybe, maybe something's going on.

So that's optimism, pessimism, optimism rejoinders. Now to, to misuse the his, his, the misused historians word of the, of the conference, let me complicate things again. And so let me offer the pessimist rejoinders to this. And then I, and then I'll stop at some point. Don't worry, it's not just infinite, infinite regress, okay?

Peace mission rejoinder one is, they tried, people have tried to measure other things. Other than cognitive impacts, like non-cognitive impacts in this and, and find nothing. And look, at some point we have to ask ourselves, are we, you know, maybe subconsciously, but doing a fishing expedition is this sort of, not what I'm intending, but basically like data mining where, we know.

We know what we want to find for Head Start. What we want to find, is that cute kids are brought to success through this program. And is that influencing the, the sort of research findings that we think of as meaningful and, and implicitly keep or discard. So that's, that's rejoinder one, and this joined number two, is bullet point one up there.

That one of evidence. May not be so bullet proof as as we think. So here's what I wanna walk you through that in a couple of steps. I'm gonna say some negative things about a couple of papers let me start with my own. Yeah, before I these negative things, I, I wanna put down a marker.

I think this is a great paper and I'm very proud of it.

>> I, I, you know, we just shouldn't, shouldn't over, over maybe over interpret the, the, the effects we find, okay? So, our paper is cited for its head impacts in two dimensions. One is education gains, and one is health.

So, thinking about the educational gains, we do find some educational gains, but our results are, are basically have

marginal statistical significance. And sometimes sensitivity specification. I mentioned a half a year increase in schooling. The p-statistic for that is 1.55, right? So, so that's not, you know, we are, are other stuff on, we have a three percentage point increase in high school grads, we have a better p-value there, .032, so it's not, it's not, like, nothing.

Although, that census finding is based on finding people in their 20s and 30s. Where they live then, assuming that they went to Head Start in the counties of where they live now, and then attributing the program based on that, so there is real concerns about migration. You know, in our defense we are very upfront about that, we do all we can, we argue that, you know, the, but, but still we should take this as evidence as suggestive as not conclusive.

Our, our health gains we do find some reductions in mortality due to Head Start susceptible causes, but these are basically things that are about severe malnutrition and or things for which immunization under immunization was just rampant in the 60s and 70s, so things like other, other, o, other things like that.

So that was and even in the 60s and 70s, that was a small fraction of child mortality, it's a much smaller fraction now. So if we think about the sort of external validity concerns, or how much do we want to extrapolate? From that to today, you know, maybe you wanna think of this as a metaphor.

I hope that this is a metaphor for today's programs, but hope on a metaphor is not the same thing as confidence in, in, in the long impacts of today's programs. Okay so additionally I wanna talk a little bit about reassessing some of the sibling comparisons estimates and I wanna talk in particular about the paper by Garsis, Thomas, and Curry.

And there are sort of three, three points of caution I wanna have as we interpret that paper. Point one is, is a well known concern about sibling comparisons which is just the issue of why, what led one sibling to go to Head Start and the other not to.

Was there something special about that kid, or something special about their parents, and then we're basically back to the same problem with non-experimental research and designs. The other points have to do with this replication and extension that's been involved with, with this collection of stellar graduate students here at Davis.

And I would say my interpretation of this work that we've done here is to indicate that the, the sibling comparison estimates in this study, we should interpret as suggestive, not definitive. And so I wanna, I wanna walk you through that a little bit more. And so if we construct the PSID sample and we, we did pretty good, we got that good sample mean, our reg, our regression sample look pretty good, untill it comes a time to do this sibling comparizon regression, adn we didn't quit do so good.

So I wanna show you those, this is the same results that I just showed you for. This is the original study and then I'm gonna show you a parallel, which is our study with our data that we can. And, and what you're gonna see, I'm just gonna tell you, is that there's gonna be some differences in colors and stars.

Are numbers aren't gonna be plain and they're all gonna be within a standard error. So it's like pretty good, but not perfect. And so the basic pattern is it's a weaker here, a little weaker here, a little stronger here, or not stronger. You know, it's, it's pretty good, okay, part of digging into, well what were these discoveries?

We spent a lot of time, a lot of time trying to define these discrepancies, right? And we saw how more investment we still have to do on that, but one of the things we learned and thinking about those discrepancies is that, there maybe less variation would be. So let me, let me spell this out for you a little bit more, by talking about what's behind this coefficient.

Now mind you, this coefficient here is, you know not a starred coefficient, but, but, but I understand what's going on behind it very well, and we're trying to figure out why we have a different number here than there. And this is what led us to, to get, put a pause on our replication efforts.

That sample size, in these sorts of estimates may be much smaller than you might think. So for instance, for looking at the African-American sibling example, we have 627 kids who have siblings. But for looking at the Head Start impacts,

we don't just need to know who has siblings.

We needed to have what, family where one kid went into head start and one kid didn't. However, 94% of these kids, neither of them went to Head Start. In fact, we have about 50 kids, where one kid went to Head Start and one kid didn't. Of those, maybe 13 kids in the sample were ever booked or charged with a crime.

So those estimates that we have are basically about, how are these 13 kids distributed amongst the 50. And at the point, we realized you get kid wrong, or you have one family off or miscode. These numbers are gonna be very sensitive, to minor specification choices. And so, so, so that, so that just, I think underlines a lot of these simple comparison samples more generally and I think, doesn't mean that there's not suggestive evidence of the facts, but maybe does mean that it's not as conclusive as we would want.

However putting that concern aside, or maybe because of that concern we took a couple of steps to expand the sample size. Data and time has marched on. We not can make more comparisons that we could've 15 years ago. We can bring in more siblings and some people. Previously, there were comparisons, but they were too young to have long run outcomes, and now they do.

Additionally, the people for whom, some of these people have aged into their 30s and 40s, so we can look at even longer run outcomes. So here's, here's what happens when we expand our sample size. This is before. This is our original sample, before adding in extra observations from expanding the sample size.

And here's after we add in the extra observations. So, this is probably what, I think of is the current best evidence using the PSID design. In sibling comparisons. We have, our ends have almost tripled. Our standard errors are much smaller than, than, than in the so we have much more precise estimates.

And basically we find nothing for high school impacts. No impacts for these outcomes for African-American kids. This is the one finding that sort of seems to stick through. Some college education. No it's a small estimate maybe moved from to more possible, more possible size impact destiny, okay? So so that's the kind of a lot of nothing, so that's the one person rejoinder trace them, to short run outcomes.

The intermediate clinical endpoints finds stable relationships, so we know what to look at today. And, basically my punch line here is, I think we're a long way of from that. And so, so that's my transition. That's bullet points one and two of the talk. And I wanna do a talk next about a preview of some ongoing work that.

That's going on here at Davis that I'm I don't have results for you all here, so this is. But I'm really excited about the, the promise that this has to help resolve the, the, the lack of knowledge that I hopefully have convinced you that we, that we currently have.

So that's, that's what's next. And I'm not sure where I'm at on time. I just wanna.

>> You've got 20 minutes left.

>> Excellent. This work is very, very preliminary, and and so I need to well, you know, how when you download software there's an end user license agreement?

You know, things like I recognize that this software may crash my computer, or it may put cookies on my computer and loses all my data and privacy? So, so I have an end user licensing agreement for the preliminary results. I'm about to show you here. Including the PSID ones I did just show you.

So let me see here. These results are extremely preliminary. They may change. I'm not gonna take them too seriously. Oh, as is with any end user license agreement, of course there's gonna be cookies, right? But, but, but thankfully as Greg alluded to you we, we have cookies here already.

The, the type you eat, right? So, okay. So with that in mind let me tell you about this, this work. This work is preliminary enough that this is the state of the three projects. And their titles. They're all sort of projects in search of titles, and I've already told you about project one.

Which is the PSID project that we're doing. So what I'm gonna talk next about is projects two and three. One of which is a big data project and, and the, and the other which is our first, our first work using that data. All of these projects are a joint work with Michelle Gross, and Natalie Ho.

And this has just been my delight and incredible good fortune to work with this team. It is, it is been amazing anything that looks like results that I've shown you or I'm about to show you would be not possible with are Ph.D students and program. So, we talk about these program a little bit this project the first project is a big data project.

And it's basically a project meant to build data that can give us supply shops and head start exposure. And we want to build two panels of head start funding data, one at the state year level, and one at the county year level. And I have to say I think the state year aspect would just be like an hour's work, or, you know, maybe just go find out, you know, you can see, you can find.

This state got this much Head Start. Real easy for recent years. And you think it, it should, it should be there and haven't yet found it. And so that's been the, the first part that, I wanted to tell you a little bit about. We especially Natalie have scoured high and low the virtual and real world.

And here's what we found. From, from OEO reports from test, statistical fact sheets from NCS digest, from budget reports and so on and so forth. We've been able to call buds gather here, there and another, and I'll show you what the state of that project is. Information on funding and sometimes enrollment, and so this is gonna be something we're going to use in two ways.

Where one is, is the sort of whale for this is the county year panel, and this will help us validate that. And it will help us sort of check that and clean that. But well it's also gonna be a direct source of measure, that we can, that we can use, and I'm gonna show you some work on a project for that.

Additionally, you combine it with information on the at risk population. Whether at risk is defined by kids of the right age, or maybe poor kids of the right age and, and so let me, let me show you the what, the year, the data we have so far of our state year panel.

The solid gray line here is, is just the national published for Head Start, and well, and funding, and the blue dots are the years for which we have data for all the states. So, with four of those years for which we have data for all states, we sum them all up, and compare them to the nationally published numbers and as you can see, the blue dots are pretty good.

Look, it follows the pattern. The levels are pretty close. It's not so bad. You can see there's some gaps starting in the 80s, and 70s, and 60s. So, so we don't have so, so we're not yet done. We have more work to do on this. But, I would say, you know, it's looking pretty good.

Do I have more to say about that, oh yeah, here's how it says, here's how it looks. This level the big ramp up in the 90s in the level and you can see a few things here. Thing one is we haven't finished with our data cleaning. Okay thing two is this huge state to state variability in Head Start exposure per child.

And if we had enough time to stare at this there is state to state variability in the trends of Head Start exposure per, per child. And the thing three is Mississippi has a lot more money than the rest of us. I mean, you know, in terms of the Head Start money per child, but probably because of poverty the, then we can look at the pur, of poverty numbers here shortly, too.

So that's basically the, the, the result of the state year data collection to date, and I'm gonna use that after telling you about the other part of the data collection project. So the next part was a county year panel and in Matthew's talk this morning she was very, very nice.

He said, I you know I've, I've worked on some data not talking about the sort of hours of sweat and blood that she and

her collaborators have put into that. And, and so I'm not gonna tell you about the I'm just gonna use it. And that's unfortunate, I'm gonna tell you a little bit more about, about sort of about what we've done in a parallel, a parallel effort.

There's two sources of this data community action program data and federal system files. This, this conference is co-sponsored by the OEC history group, and Gragg Clark the other day was telling me it's not economic history if your data comes in electronic format. And I think, I think that these data files, these data files prove that thing, prove that wrong.

They are just, they kind electronic format that you can go to Bethesda, Maryland to the National Archives and, and get or order. But they, but the, they're not useable. And so so, let me tell you a little bit about the wrestling we've done with it so far. They're very messy, there's no decent documentation.

There's three examples that I have. But this is like three from a list of, I dunno, six to 12 so far another probably dozen, or two we have to deal with to get this data into shape. We look to see the funding, how much funding a county got and you see letters instead of numbers, you know, not, not always there's like number, number letter, right?

So, so, that, that, that we've been able to, to, to fix cuz actually, that's not that big one. I'll tell you what, I'm going to take county Mississippi. I'm take county Mississippi's account at 14,000 people on the border with Louisiana. It has about three or four towns, and about three Head Start centers.

And if you look at the funding profile in the, in the data, it's like 1972 it has \$800,000 of Head Start funds. 1973 it has \$900,000 of Head Start funds. 1974 it has \$280 million of Head Start funds. 1975 it has \$900,000 of Head Start funds. And so in fact the entire time series for the whole country is blown off of its trajectory because of county in 1974.

And so so there's just like as an example, sort of a messiness. You get similarly separately in New York and New Jersey, their funding disappears in 1974. And, and, it's not, doesn't have anything to do with because they lost collectively about 30 million, whereas had about an extra 280 million.

So, so something special and wrong was going on in 74, but in general there's the mess, okay? We've done a lot of cleaning work so far and we have lots left to do but so far right know. This is the similar picture I showed you as we were focusing on 65 to 80 which was years for which we have county data, then again, this again is the national numbers, which which are sort of are published everywhere.

These blue dots come from our state year panel, so this is what I've sort of already checked and the red circles are our new county year funding aggregated up to the national level. So again, it was looking pretty good, before, boy before Amate county was was cleaned up this was up here.

You know, it was, so that was so it's looking pretty good. Again, not perfect. Again we don't have for this calendar year now we can check not just against the national trends, but for some years, we have pairs of state and county. And so, we can do, we can look at cross-sectional comparison state-by-state, using our state data and our county data.

So here, for instance, in 1966 is how the state data, funding per, per county, per state, and the county data aggregated up to the state look. It's, you know, it's not great. It's not bad, in fact it's worse than it looks here, because this is a log scale.

So, so these, these differences are pretty big. This differences reflects the fact that the county on the whole, is higher than the state for that year. This is the same, this is the same picture as this right here. Here's for 70, 75, and 80. And in fact the correspondences looks, looks better for the other years.

So we're gonna take this as a sort of preliminary partial validation of the county data as we've got so far. I, and, and, and before moving the data project, I'm just gonna sort of show you what the county data looks like in that similar sort of spaghetti-type picture for just two states, just to get a sense, for Alabama and for California.

And so here's the county-specific Head Start's funding, funding for three and four-year olds for every county in Alabama. And the same numbers in, in California. And again you can see we have more cleaning to do, but there's a lot of variability, both over time and cross counties. And understanding that variability gives us a chance to find supply shocks for access to Head Start for kids, that we can then learn about the long run impacts of Head Start.

So that's the sort of, the promise down the road for that data set. Now, to wrap things up. I do wanna tell you about how we've been using, how we've been using, oh, no, no. This is my ask. This is my second ask. Think, wrapping the data part of the project, they have potential, but they need a lot of work.

In fact, I think anybody working with data has to talk about the work they've done for it to be credible work. It's difficult to even know what to check against and I'm, I'm excited for leads and suggestions as we help to fill this out or find data against which to validate it that, that's my, that's my second ask here is, is, is help summarize the next steps for that.

Okay so, now using that data, when we talk about using the state year panel to, to and using this big ramp up in the 1990s to see it, was there something that we could use to learn about the impacts of Head Start. So just to remind you. There was a big ramp-up of funding at Head Start in the 1990s, okay?

So now with the state year panel we can start to say, well, how did that ramp-up impact different states? Did they all get the same? Did they all grow proportionately? What can we learn about that? And so here's what we can learn about that. This is looking. On the x-axis, the dollars per poor child in 1990 for each state, before the ramp up.

On the y-axis the dollars per poor child in 2001. There's a lot in this picture, so let me tell you a little bit. First of all, there's a lot of variabilities state to state before. There's a lot of variability state to state after. The growth, even for states that start off at the same spot can be very, very different, and some of that's driven by small states that could just be measurement noise, like.

North Dakota, but you can't quite see it, but I spend a little bit of time staring around oh, Pennsylvania's right around here. No, no, no. Oh, where's New? I, there's a Pennsylvania right in this axis somewhere. We have a Pennsylvania, New York, where- I'm gonna give up. I have, I have the problem of too many, much help and I a problem with the room syndrome and New York maybe double, and Pennsylviania maybe driple it's, it's Head Start funding.

There's also some equalizations, some equalizing of the funds. And, but not perfect equalization as you can see. Okay, so, just lots of variations.

>> What's going on with

>> Oh, there's a lot of mysteries to be resolved. I don't. Absolutely, absolutely a point of curiosity. And this is a two point.

So I don't know if special or funny, in either our estimates of dollars. Or of kids, or of child poverty rates. We, you know, we have work to do on, on checking all three of those pieces. And, and when you're looking at changes we just, we have to figure, we have to look more into that.

>> Okay, very good. So this begs the question, what was behind the variation from state to state in the growth of Head Start funds in this ramp up period? And what can we learn about that? Here's one candidate answer. Is infact those legislative should guide the allocation of funds from state to state, the state don't touch the money, they don't direct the money, but, but they get the laws written by Senators, and so they say which house should get the money.

And the, the Head Start programs and small print here. Don't worry. You don't have to read the small print. Here's the summary. You take the amount of money and you put some aside for running the program for Indian and migrant programs for R&D, stuff like that. Of what's left, each state gets however much they got in nominal dollars in 1981.

And then, of what's left after that you put into two pots. One third of it gets allocated based on the number of zero to 18 year old AFDC folks. And the remaining two-thirds gets allocated, based on the number of zero to five kids in

poverty. This, and interestingly enough, these pieces are two of the three pieces that Martha identified in her earlier allocation formula from the 60s and this is here in the 1994 language I, I would guess that there's some linkage between those and somehow the unemployment got folded into poverty.

And, and then that's how we got there, it's just a guess. So what does this formula serve well as in predicting, in predicting how the money was actually allocated in those scatter plots? When we took that formula, total ingredients, total amount of money, what was your 81 numbers, how many AFDC kids did you have?

How many poor kids did you have and we got a predicted level. And now with our state year panel we know the actual level. So with that, we can plot them against each other. And I'm not plotting a regression line here, I'm only plotting a 45 degree line, and it looks pretty good, right?

So we're feeling pretty good about that. Here's the same picture done for every year from 1990 to 2001, so we can see the growth. And it's not always perfect. And actually they rewrote the law in 98, and started looking a lot better after they rewrote the law. So we can start to tell some stories there.

So it looks pretty good. If you think about the growth state-by-state from 1990 to 2001, and we say, well, let's see, what was the actual growth and what would our formula predict for the growth? Put that into a regression format and we get a coefficient of one. A dollar or predicted growth, no, not a dollar, a percentage point of predicted growth, corresponds to a percentage point of actual growth.

This is on a base level of about 200% growth per kid. We're putting some what we think possibly confounding values. This is not just about poverty. It's not just about changes in the fraction portion, not just about changes in the share of the number of poor peoples. Bunch of we can throw, in a bunch of other variables that sometimes are predictive themselves although very economically small coefficients, but never really move that coefficient away from one and so we think our formula what's going on.

So that's, really exciting and holds great promise for the ability to use this formula and use this new data to learn about the impacts of Head Start. Now sad to report I don't, I don't have that, that, that next step for, you now, so but hopefully it'll come soon.

What's additionally exciting about this sort of research design is that in order to implement it. Well, all that we need is to know where were you a kid? Which state were you, and what cohort were you? And there's a lot of datasets that have that, including a lot of datasets that have a lot of outcomes.

Plenty of intermediate clinical end points that we might wanna look at. And, so that's just, holds great promise. I'm very excited about it. Additionally, at the state level, we might think of migration as less of a concern. So additionally we know about the legislative language not just during the ramp up period but also we know what happened after, and we know what happened before at least into about the 70s or so.

And so there's the potential to really understand much of maybe not all but much of. What drove funding to different states, and how different pi, kids might've been exposed to Head Start throughout most of the program's history. And so this is just the beginning of, of research agenda to come, I'm excited for that.

So so here's my, here's my conclusion. I am gonna come in under, great. My conclusion is, we all know and love Head Start. But maybe we don't know as much as we should. And so there's the risk that maybe we love it more than we should, and we need to, we need to know more, we need to learn more, and so stay tuned.

So that's what I've got, so thanks, okay. I'm Ann Stevens, the Director at 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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