

THE BROOKINGS INSTITUTION
PROMOTING K-12 EDUCATION TO ADVANCE STUDENT ACHIEVEMENT

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PARTICIPANTS:

Welcome:

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OVERVIEW OF HAMILTON PROJECT STRATEGY PAPER

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PANEL I: THE POWER AND PITFALLS OF EDUCATION INCENTIVES

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Moderator:

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Discussants:

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PROCEEDINGS

MR. RUBIN: I'm Bob Rubin, and let me welcome you on behalf of all of my colleagues at the Hamilton Project for today's discussion of primary education K through 12 to advance student achievement. We began the Hamilton Project about six years ago and it was really a quite unusual combination of policy people, academics, business people and people from finance, and the idea from the very beginning was not to endure specific ideas, but rather to catalyze seriousness of purpose in policy development and, most particularly, in public discussion at a time when it seemed to us there was a tremendous need for that catalyzation.

If you look at today's world and the challenges we face, it seems to me that that need for seriousness of purpose has increased substantially even from the time that we started this project, and that certainly is true when you look at the dismaying nature of public discourse and political action.

Our consistent view has been that economic policy should pursue multiple goals, growth, broad participation in that growth, and economic security, and that all three of those are mutually reinforcing. We also believe that there's a vital stake for government in a market based economy.

Clearly, this has been a period now for quite some time where many Americans have been and continue to experience terrible hardship. Country's economic difficulties, it seems to me at least, are likely to continue for quite some time, and in that context, the Hamilton Project has had a serious focus on the issues of today.

We've conducted discussions of stimulus, discussions of mortgage relief and various other subjects. Let me just say in the context of the tremendous need we have as a nation, for seriousness of purpose in governance today, a more specific comment.

2012 faces a fiscal drag, and I don't think there's any question but that we need a fiscal stimulus that will fill that drag and hopefully add a bit beyond that, and that we need to enact now deficit reduction that would go into affect, that would be implemented two or three years down the road to give the economy opportunity for recovery to take hold, and that in that context, we will need to have constraint, cost constraint on all scores, on all fronts, and also significantly increased revenues. On the other hand, the politics around all of this are extremely difficult and ultimately all of this could make a material difference that will all come down to political will.

With respect to the long term, which is the primary focus of the Hamilton Project, the United States has enormous comparative advantages, comparative strengths. We have a dynamic society, we have entrepreneurial culture, we have flexible labor and capital markets, we have the rule of law, we have enormous natural resources, thus, we are well positioned to succeed in the longer term.

On the other hand, in order to do so, we have to reestablish a sound fiscal regime, we have to have vigorous public investment, and we have to have reform in a whole range of areas that are key to economic success, and all that, in turn, will come back again to our political system, to political will, and to having political processes in which are elected leaders are willing to work across party and ideological lines to base decisions on fact and analysis and to make difficult decisions.

Thus, political will is the ultimate challenge for our economy and for our society. And that takes us to the purpose of today's program, any discussion on long term challenges and prospects the American economy faces centrally on effective education in grades K through 12 and the many shortfalls that we experience in this area.

There is, as all of you know, a tremendous amount of activity, a tremendous amount of study in this area in both the public and the private sectors. What we at the Hamilton Project have tried to do is to take account of all of this work and then to sponsor policy thinking that we thought could add to the vital national effort.

In that respect, the Hamilton Project issued a strategy paper and conducted discussions around policy papers prepared by outside academics and policy analysts at an earlier point in time. And today we carry forward with a second strategy paper; it's in your materials, and a set of papers by distinguished experts around which we will then have policy discussions. Each paper, in effect, will be the jumping off point for discussion on a different topic, and you can see the program in your materials.

Let me now outline the program very briefly and introduce our panel members. It is a truly remarkable and outstanding group of people. I will not go into the resumes of each because they are in your materials. Our program will begin with an overview of The Hamilton Project strategy paper by Roger Altman, former Deputy Secretary of the Treasury and now Chairman of Evercore Partners. Our first panel entitled The Power and Pitfalls of Education Incentives will involve presentation of a paper by

Roland Fryer, Professor at Harvard University and recent winner of a Genius Award from the MacArthur Foundation.

Roland has done things with The Hamilton Project before, and I said to him this morning, this was the result of – shows what can happen when you associate with The Hamilton Project. Well, none of the rest of us have gotten genius awards yet, so it's not a guarantee. In any event, we have Roland, who we are delighted to have.

As discussants, we will have Peter Gorman, Senior Vice President, Education Services, News Corporation, and the former Superintendent of Public Schools at Charlotte-- Mecklenburg, okay, Robert Hughes, President of New Visions, and Michael Mulgrew, President of the United Federation of Teachers. The Moderator will be Michael Greenstone, Professor at MIT and Director of The Hamilton Project.

The second panel entitled organizing schools to improve student achievement, start times, grade configurations and teacher assignments, will start with presentation of a paper by Brian Jacob, Professor at the University of Michigan. The discussants who I've already introduced will be Peter Gorman, Robert Hughes and Michael Mulgrew, and the Moderator, again, will be Michael Greenstone.

The third panel entitled new assessments to improve the accountability will begin with a paper by Derek Neal, Professor at the University of Chicago, and the discussants again will be Peter Gorman, Robert Hughes and Michael Mulgrew. They will be joined by Jonah Rockoff, Professor at Columbia University, and the Moderator, again, will be Michael Greenstone.

And the fourth and final panel entitled lessons learned from education reform and the path forward will be a roundtable discussion amongst Wendy Kopp, Founder and Chief Executive Officer of Teach for America, Randi Weingarten, President of the American Federation of Teachers, and David Leonhardt, the Washington, D.C. Bureau Chief of the New York Times and last year's Pulitzer Prize winner in the commentary category. David will also act as Moderator.

It is really, when you think of what I've just described, a truly remarkable program on a vital subject. It will give us all the opportunity to listen to and engage with an incredible assemblage of thought leaders. For developing the intellectual construct of this program and then bringing together this remarkable group of people, let me thank three in particular, Michael Greenstone, Director of The

Hamilton Project, Karen Anderson, the Managing Director of the Hamilton Project, and Adam Looney, the Policy Director of The Hamilton Project and Senior Fellow at Brookings.

Let me also thank what is truly a remarkable staff that we have at The Hamilton Project. They are enormously talented and they work endlessly to produce what we'll be experiencing today. Thank you all very much, and Roger, I turn the podium over to you.

MR. ALTMAN: Good morning, everyone. I'm going to try to be particularly brief because I expect to learn a lot from these extraordinary panelists and they're not going to learn much from me. This is the second event which The Hamilton Project has dedicated to education. And the lights, I notice, have darkened. Any further and I'll stop my remarks. That is appropriate because most evidence shows that the single most important factor in determining an individual's lifetime earnings and standard of living is the level of education which he or she has attained. We could have a great debate about this, but I would argue that's the single most important factor, I think most of our panelists or all of them would say the same, and that ties directly to the premise of the Hamilton Project, which is to formulate and promote policies to achieve broad based economic growth in America.

So of all the policies we have focused on over the past five and a half years of our work, this may be the single most important one. Let me illustrate this, borrowing from the strategy paper on education which we released today and which I hope most of you have.

Increasing levels of education contributed one quarter of the productivity gains achieved in the United States over the 20th century. It also narrowed the historical pay gaps between men and women and between whites and minorities to the point where today the education levels of women in America now exceed those of men. In fact, over the past 40 years, the share of women receiving a college degree, I find this extraordinary and wonderful, has risen from 12 percent to 35 percent.

Our focus on education also is timely, because this American legacy of consistently improving education levels and standards of living has come to a halt, and that is truly a profound and a profoundly negative development, and it is supremely important that we reverse it. But standard measures of student achievement have now been flat for some time. Results of national standardized tests given to high school students, high school completion rates, college completion rates for men all have been flat for

some time. And the United States, for example, no longer leads the world in college completion rates and we are continuing to fall down that list.

In fact, as this paper points out, if GED qualifications are put aside, the proportion of our population with a high school diploma actually has fallen over the past 30 years.

Just to widen the context, I want to cite quickly five factors that I know we'll be discussing today and that are alluded to in the paper. One is that these stagnant levels of educational achievement are contributing to declining real incomes for most of the American work force. The real earnings of the median working age man in the United States have declined by \$13,000 or nearly 30 percent in real terms over the past 40 years, returning that level of real earnings for the average working man to a level of the 1950's. That's an astounding figure. Secondly, this stagnation is occurring while the United States spends more on education than we previously did, approximately 3,000 per student more than other industrialized nations spend. So as the paper points out, we're spending more and no longer achieving more, and if so factu, our approach isn't working very well.

Third, the pay of teachers in this country relative to other professions remains low. The gap between teachers and other workers in the country is approximately twice as wide as the OECD average, and that gap has been growing over the past 30 years.

Fourth, much of the vast research on education and education reform has shown, particularly in recent years, that the single most important ingredient in a child's education is a strong teacher. The difference in test scores between the most effective and least effective teachers equates to an additional six months of school. An above average kindergarten teacher, for example, raises the lifetime earnings of a class of 20 by more than 300,000 for each year of teaching. And finally, some charter schools in this country have achieved startling positive outcomes, although charter schools as a whole have not. It is important, and you'll hear a lot about this today, it is important to do more work to see whether the techniques and the costs of the star charter schools can or cannot be replicated on a meaningful scale.

As Bob said, we have an extraordinary program today, it will be one of the very best which The Hamilton Project has ever put forward, and I'm happy to say I think that's a high bar. It underscores one of the grounds of optimism when it comes to education reform, namely, that there is

amazing talent at work in this field and you're going to see that today. Thank you and let's get onto the panel.

MR. GREENSTONE: Welcome; this is our first panel, the power and pitfalls of education incentives. We're very fortunate to have Roland Fryer here today, who is a Professor of Economics at Harvard and recently received the MacArthur Genius Award. We also have Pete Gorman, who was introduced by Bob, the former Superintendent of Charlotte Public Schools. We have Michael Mulgrew, the President of the United Federation of Teachers, and Bob Hughes, the President of New Visions. I think with that introduction, maybe we could have Roland start. And I just want to say from the outset, there will be time for questions at the end, and I think the way we're going to do it is, we're going to pass around cards and we'll collect them and then I will read a couple of the questions. So, Roland, if you want to get us started.

MR. FRYER: Thank you. All right, good morning, I think it's still morning, and thanks for The Hamilton Project for having me. Let's start out by talking about the racial achievement gap in America. And I'm sure you've heard a lot about it, but maybe not of seeing these numbers quite yet.

So these are data from the National Association of Education Progress, which are kind of annual assessments given – national assessments given to fourth, eighth and twelfth graders across the U.S.

What I want to show you here is that the green bars are the achievement of white students in America, the, I don't know what color that is, but yellow, let's call it, bars are the achievement of black students, and the purple bars are the achievement of Latino students. And what you see is, at least for me, pretty depressing. There's a couple things you see. One, in every city in which NAT data is collected, there are 21 major cities in America, there's enormous racial differences in achievement. These are proficient scores, so these are kind of kids at grade level, if you will. So we're in Washington, D.C., so let's check out D.C. In D.C., 72 percent of white students are proficient in reading in eighth grade. Now, you should compare that to roughly eight percent for black students, okay. I think the NAT test has like four questions on it or four answer choices. I think if you just marked A, you might beat eight percent. So this is like really not good, okay.

If you look across all 21 cities, there's not – none of these cities do more than a quarter -- more than 25 percent of black students can do reading or math at grade level, so there's a big problem that we have in this country. And again, I'm sure you've heard about it, but maybe you haven't seen it so graphically.

Now, we've done a lot of things, so, you know, when we were doing the incentive experiments, I got a lot of emails, some from my own grandmother who was an educator for 35 years, saying why don't you just do all – why don't you just do the conventional stuff, why don't you just do what we know works, and I was like, well, if you're keeping secrets, you should just tell me what works because I mean we're all out here busting our ass for nothing. And so, you know, a lot of things you say are like why don't we reduce class size, or why don't we – people just need more money, so I said, okay, let's check into that. So here's – we have some conventional wisdom here. So this is total expenditure per pupil in kind of '08/'09 school dollars. So as you see, our per pupil expenditure over the last 40 years has gone up nearly two--fold, okay, and that's in real dollars. We're spending a whole lot more on education.

Our student/teacher ratios have declined considerably, okay. So in 1970, we were roughly a little above 22 kids in a class, or 22 kids per teacher, now we're a little below 16, okay.

And if you look at just the mean reading and math achievement across that same time period, while these investments have gone, well, people would consider up, more investment, the math achievement and the reading achievement actually stayed flat, okay. And if you look at high school graduation rates, again, flat. So I would say then conventional wisdom, at least on its own, hasn't gotten us there.

So between 2007 and 2010, we did a bunch of incentive experiments in schools across the country, in six different school districts. We worked with about 25,000 kids and gave away a little over \$10 million into bank accounts for the kids. Every kid got a savings account set up for them. We encouraged them to save, it didn't work. As one of the kids told me, he says, Professor Fryer, I did what you told me, I saved my money for about a month and then I spent it all. But in the eyes of a fourth grader, the discount rates, you know, a month is a long time.

So we kind of designed the experiments such that we would have inputs, kind of paying for inputs, paying for behaviors, and paying for outputs, the ultimate thing that you actually wanted to

reward in the first place. So in three cities, Dallas, Washington, D.C., and Houston, we paid for inputs. So in Dallas, for example, we paid \$2 a book to read, in Washington, D.C., the kids got up to \$100 every two weeks if they did things like came to school on time, didn't punch the person next to them, et cetera, low hanging fruit.

In Houston, we paid \$2 per math objective. And in Houston, we did something which I think is kind of interesting, we aligned the incentives, so we had teacher incentives, we had student incentives, and we had incentives for the parents all focused on one objective, which was math achievement. So the kids got \$2 a book ---- \$2 a math objective every time they mastered an objective, and the parents also got \$2, and then we incentivized parents to go to the school and have meetings with the teacher to discuss their student's math performance.

In New York City and Chicago, we paid for outputs, okay. So in New York City, we paid kids just for the test. So a fourth grader could make up to \$250 in that year. And you may ask, Roland, how did you set the prices, that was the current price of an Xbox at that time. So you could make up this \$250 for being paid for output. If you got a good grade on a test, you got more money. So you got \$5 for actually just taking the test, because 18 percent of the kids in New York City in the previous year just kind of turned in the test with their name on it, so we gave them \$5 for completing the test, and then every question you got right, you got more money, up to \$25 per assessment. In Chicago, we paid kids for grades, you got \$50 for an A, \$35 for a B, et cetera, okay.

Here's what we found, in the cities where we paid for inputs, Dallas, D.C. and Houston, we got, wow, this time goes quickly, we got positive results, statistically significant in two out of the three cities. D.C. is marginally significant. In New York City and Chicago, we actually just got zero results. I mean the co--efficients were negative, but they were statistically insignificant. So the Dallas result, if you look, it's about a .23 standard deviation increase, that translates into almost three months of schooling, and this is something that costs us \$20 per kid, okay. So the return investment, if you will here, is very, very large, okay.

I have like 15 seconds, so let me just quickly tell you what I think we learned in those three years of doing those incentives. Number one, do provide incentives for inputs, not outputs, especially for younger children. Do think carefully about what to incentivize, okay. This miraculous idea

that I thought we're going to go in, give kids incentives, they were going to get excited about school and do a lot better, no, they did exactly what you told them to do and no more, it's true. Do a lot of the incentives, I think we found some powerful results in Houston. Do implement what works.

One of the most disturbing conversations I've had since I've been working education was with a very high ranking policy official after these results came in. He said, wow, if you pay kids to read books, you get a big effect, I said, yes, sir, he says, all right, so we're going to pay them to do their homework, but not really cash, we're going to use something else, I was like what are you talking about, I don't know if that's going to work or not, I've just shown you this is going to work. So implement what works, not what you get up in the morning and think works.

Do stay the course. My own grandmother wouldn't talk to me for the two years we did this. It's a very controversial thing to do, but I think there can be a high return investment. Don't think the effects go away after incentives are removed. We found in Dallas that 60 percent of the impact was still there a year later. Don't believe incentives are destroy intrinsic motivation. Every incentive experiment we did, we did the social psychology inventory of intrinsic motivation, we had no effect either way on intrinsic motivation.

Don't worry, students waste their money. A lot of them actually – don't worry about it, they do. But a lot of them saved actually. And we did like a survey asking what they spent their money on, video games, shoes, savings, that's what it went to. Don't be cheap. What we found was that the more money you gave students actually, the more they earned, so when we doubled the incentive in Houston, we almost got double the amount of math objectives mastered for that period. So it was really, really interesting that students were very much weighing the cost and the benefits of doing their math objectives.

And the last thing and probably the most important thing is, do not think that incentives are panacea. They are not going to solve those big numbers that I told you about in the beginning, but they do have a positive return on investment when you incentivize the right thing. But again, you can give kids incentives, they're not going to come in and say, wow, you've changed my world, I'm going to totally invest in education, but if you pay them to do a math objective, they'll do a math objective. Thank you.

MR. GREENSTONE: Thank you, Roland. I thought I would direct my first question to Pete. Pete, you oversaw a major school district. Roland has – one thing that I like about Roland's work on this is, he takes very seriously our spending for people has gone up by a great deal and we haven't seen returns, maybe we should be looking for new tools and new mechanisms. How would that work on the ground, and did you think of something like that during your tenure at Charlotte?

MR. GORMAN: Well, Roland and I had dinner in Austin, Texas about two – three years ago and we discussed this, and I went back and talked about it with some of the individuals on our team and some of our school board members, and there was a segment that was horrified that we would even look at the concept of incentives.

And then actually before I left Charlotte as Superintendent, Roland and I had had some discussions about us doing some reform work with Roland. But it's funny, I'm a parent of a 13 year old, and I spend my entire life thinking about incentives with our daughter, but I do it in a different way that it just seems okay, and I have justified it for my life because I have the ability to do certain things for our daughter which really fall in the category, to me, of incentives.

But yet when I go to work and talk with others, and as a Superintendent, I'm not willing to let the policy piece stand up to the political piece. And we really get frightened by school leaders with taking on challenges like this and make decisions of what battles do we want to fight. And I think Roland nailed it when he said it's not a panacea, but it is one part, and, to me, this truly points out the multi prong approach that we have to use, and right now we seem to be exclusively focused on approaches related to adults and reform work than approaches that directly go to the student. So I continue to be intrigued by this work and think that it is a piece that we've got to dig deeper on, and then also how we determine what is that trigger point for what incents a child, because what I'm finding with a 13 year old is, what I think it is today and what she thinks it is today is different tomorrow, and I've learned I'm not cool, and I don't know what those trigger points are. So those are some initial thoughts.

MR. GREENSTONE: Michael, so you represent teachers?

MR. MULGREW: Uh--huh.

MR. GREENSTONE: How do they think about this?

MR. MULGREW: Well, we've tried the incentive – I'm fascinated by his work. He studied the Whole School Incentive Program that we did in New York City, and like – as our teacher incentive programs, it did not prove to do anything effective. I was – I'm very interested on the incentivizing of the input because the input side is something that, as a teacher, I find to be much more effective. If you're looking at what are the inputs in terms of education both for a teacher and a student, then that's going to lead to stronger outputs. But there hasn't been a lot studied on the input side. Right now we have a program where we're trying to create a career ladder inside of the teaching profession, and we've tried – we've created a master teacher position with increase in salary.

I was at a school last week who's been doing it for two years, who's really drove down upon it, and I think they're actually coming up with something where the master teacher is helping all the other teachers in small groups of five or six, and the teachers are very excited about it, they feel that it's moving them instructionally, and it keeps the focus on instruction inside of the classroom.

Now, right now it's only K--1 and 2. The administrators are very happy with it, they're seeing gains that they did not see beforehand, and I'm kind of excited to see where that goes.

On the student side, I was an at risk teacher for 13 years, so incentives would be very interesting, but very – what we incentivize is the real question. The students who I taught were students who would not behave well, who did not want to go to school, and it was more building that bridge of a relationship with them that allowed them and brought them to the place where they understood where school was important. I don't know how to incentivize that. And the question that you brought up was so poignant, what do we – what is the real question on where do we put that if we're going to use it. It would be interesting to see where that – where your work takes you in the future on that.

MR. FRYER: Can we respond and interrupt?

MR. GREENSTONE: Yeah, please, yeah.

MR. FRYER: Okay. I don't want to be kicked off The Hamilton Project.

MR. GREENSTONE: We did get you the Genius Award.

MR. FRYER: It was the first time my name and genius have been used without the words "he ain't no." So you might think, particularly for at risk students, that, you know, I guess I was

really an at risk student, as well, and there's all sorts of incentives out there whether we admit it or not competing in the opposite direction.

MR. MULGREW: Correct.

MR. FRYER: And so, you know, you might think that providing incentives for students to come to school and then do – make the connections you're describing might be useful, although I totally agree with you on the teacher side. And I've been pushing this with some of my funders, and the hard truth is, I think we'll agree on this, it's just not sexy, and unfortunately, I haven't been able to get folks to do this, which is, I've wanted to run a teacher incentive experiment on the input side, where it's tied to coaching or professional development or, you know, access to a master teacher or whatever, you might think of doing it that way instead of just doing it on the output side.

MR. MULGREW: If you're in New York, I'd love to bring you to the school. It's exciting. I mean I got very excited sitting and speaking with them. They've done a lot of different things, they've done change of format, but the excitement and the level of actually meeting with these teachers in a group with their master teacher, and the master teachers truly enjoy helping, and they're inside of the classrooms, they're dealing with instruction, they're making sure that the student's data is being analyzed in a way, and they're then aligning the instruction to it, and the conversation is just all about how we can enhance instruction and help our students move, and it's very exciting. And anyone who could ever – I'll be more than happy to try to, anyone who wants to come down, to take a look at it. But you're right, and that's the first time – you know what our whole school – teachers were like – it was like, yeah, you gave us extra money, that was nice, but we were doing the work anyway, we spend all the extra time and it didn't make a difference.

MR. GREENSTONE: So, Roland, you know, I don't think you had as much time to talk about the results from the teacher incentives, do you want to just give us a quick feel of what those showed?

MR. FRYER: Sure; so in New York, they spent I believe \$75 million over three years implementing a teacher incentive program that was school based. So if a school met goals, a school – it's like an airplane dropped, I believe it was \$3,000 per UFT teacher, and then the school decided how to actually distribute the dollars, okay.

That teacher incentive program and others, at least in America, have not shown significant effects, and this is one of them. If anything, the New York teacher incentive program was negative. And so –

MR. GREENSTONE: Now, one thing before we go to Bob, and maybe Bob will just take this, and this is a theme that's going to emerge over all of the panels I think, is, when we wrote our paper on this, one thing that we were surprised by is, it looks like at least with respect to wages, we can't measure full compensation because we can't see benefits, with respect to wages, there have been a decline in teacher wages over the last 20 or 30 years, and that's relative to their outside opportunities, that's on the one hand.

On the other hand, in addition, teacher compensation seems to be heavily back loaded with lots of pension benefits and not so much pay up front – and not as much pay up front, and I think there's an open question, does that kind of compensation system provide access to the widest pool of potentially talented teachers, and I wondered if any of you had some thoughts on that, and the ways that that might relate to incentives being part of the compensation package.

MR. HUGHES: Sure; I mean I think there is a significant problem the way we compensate teachers, largely because we've inherited that structure from a time when the work force was largely female. We were looking for much greater stability, you didn't have necessarily the competitive labor market that you worried about in attracting the best and the brightest into school. So I think the challenge we face is rethinking that compensation system to ensure a couple of things, one, that we can attract different types of people into the profession, but secondly, that we can ensure that for a significant part of that labor force, they're going to be able to have a working wage job that enables them to retire appropriately.

So I think there are giant questions about the structure we have. I think that things like portability matter, particularly to younger workers. I think the idea of five year tranches for vesting may not make sense for the typical teacher, we may want to start to think about more annualized vesting procedures.

I think it's going to be a tough set of issues. You've got a group of people who worked hard under a contract and are entitled to what they've earned. I think going forward, we're going to have

some very difficult conversations, but important conversations about how we restructure that labor market to make it work.

MR. FRYER: Can I push back on that, or at least push on that? I think there's an argument out there that totally goes with what you're describing, but also with a layer on top of that, totally restructuring teacher training, because if you think, hey, if we had extra money or allowed the front loading of pensions or what have you, we could attract really, really smart people into the teaching profession. Well, we kind of have something similar to that experiment in Teach for America, right, and Teach for America has shown that they have small positive gains, but, you know, if incentives aren't a panacea, neither is that.

And so the question would be, how can we actually transform the training of teachers, because I've never seen anything like it, frankly. At Harvard Law School, you graduate, you don't go lead a merger and acquisition, you graduate from the business school, you're not negotiating a deal, you're doing PowerPoint, man. Only in education do you like graduate and then go have an enormously consequential job on day two.

MR. HUGHES: Well, I would push in the same direction, let's join forces. And really, I don't get invited to a lot of deans of schools of education parties.

MR. FRYER: Me either.

MR. HUGHES: Because I think that entire sector has been left out of the accountability debate. And so in New York State, for example, we were very excited in the Race to the Top application, to see that there was the possibility that non--universities could certify teachers and grant masters degrees, that went zero when we ultimately landed into the politics of universities in New York State. So a very exciting program led to one institution, the American Museum of Natural History getting the opportunity to grant masters degrees.

I think we have to fundamentally rethink how we train teachers. I think we have to – Roger Altman talked about learning from good schools, I would expand that and say there are extraordinary district schools and extraordinary charter schools, and those should be the locust of where we train our teachers.

We should be thinking about residency programs, we should be creating teaching hospitals, we should be using that space to build the next generation, and until we do that, we're going to

replicate the types of teacher experiences survey after survey, so as the teachers enter the profession feeling completely unprepared for the demands of a classroom with 30 or 35 students and giant challenges and differentiations. So I'm 100 percent with you.

MR. GORMAN: And I want to add one more piece to that, too, and that is that the folks who are doing school leadership, and we make it even harder because we assign them then to the most challenging and difficult classes. We did some work in Charlotte where we looked at what is the likelihood of a student that is at least one year below grade level to be assigned a novice teacher, and they were three times more likely in Charlotte, which showed me that we had set up a structure or system to take the most fragile of students, to put them with the teachers that face the greatest challenges and structure that to then create dissatisfaction for those teachers to drive them towards leaving the field of it, so we created this self--perpetuating churn, and that until we started to do some things where we said how do we get our teachers who are the most effective to take on these most challenging assignments, we found actually it wasn't money that triggered it, it wasn't money, they wanted to be with a great leader, they wanted to go in with a team, they wanted to be mentored along the way, they wanted to have time for planning, and those were all things that I thought about, wait a minute, but our colleges of ed don't link back to those areas, so we certainly know that we are creating this problem for ourselves at the local school district level, too.

MR. GREENSTONE: So, Mike, I wonder if I could –

MR. MULGREW: Go ahead.

MR. GREENSTONE: ---- ask you to speak to this. So I think what Pete just said is very insightful. And on the other hand now, we've got a system of pay where teachers are largely rewarded based on the number of years that they've been in the profession, and so one way I think to probably reward better teachers is to let them choose their school assignments or have some say in that. And I think all of that must relate to the form of compensation. And what is your view on how we could restructure things to kind of better serve students?

MR. MULGREW: That's why we've pushed over the last year and a half to actually use Race to the Top to try to create this career ladder which can incentivize teachers who want to do this very difficult work. But the incentive piece, as you said is, it's not so much the financial, it's they want to make

sure if I'm going to move, I'm going into a school that I know that there will be support for the work that I want to do with other teachers.

So we have two positions which we're playing with at this moment. One is called a turnaround teacher, which is basically the Japanese lesson plan. I'm sorry if I'm going out of people's – it's a Japanese lesson plan sharing, which is for a teacher who's proven to be an exceptional teacher, they would open up their classroom for other teachers to come in, and they would have to spend some time speaking with teachers about how you prepare a lesson and deliver instruction.

The master teacher is a much more complicated one. And what we have found, we originally were choosing master teachers based upon – only on the outputs, it was a mistake, it was a big mistake. Just thinking that if someone can move students doesn't mean that they can help other teachers. And what we now are finding out is, their ability of – the human relation ability, the ability to work with others is just as important, if not more important, than their pedagogical skills.

So there's room to do both, but we can incentivize people in a career ladder. In terms of how we get people to go into and stay in the profession, that's a challenge we face as a country, we'd lose too many teachers. And my first full teaching assignment, I was a – I had substituted for a while, but I was literally put in a basement with 30 children who did not behave well and did not want to go to school, that was me. I would not have stayed in this profession if I didn't have, you know, fortune that – it so happened that there was a teacher, one teacher who shared the room with me who was actually bigger than me because we were the only two people allowed to teach in the basement because they figured we could keep ourselves safe, who finally, after about two or three months, he said to me, are you going to ask for help, and slowly he mentored me over that – over the next 18 months. I would have never stayed in this profession. But most teachers don't have that experience, and that is something we have to look at and really change.

And Bob and his organization, my organization, have done some very creative things with residency programs, and more time inside of that classroom in real teaching environments is critical to preparing someone.

MR. GREENSTONE: I want to go back to what I think is an underlying theme in all of this, and I think your incentive work really pulls it up, and one of your do's and don'ts, it's about the

alignment of systems in schools. I think what you're really talking about is the culture that exists in schools and the way we incentivize with money or the way we incentivize with a scene or peer competition, or messaging. There are a variety of things that we need to be doing in that culture for both students and adults. And I think what's so provocative about your work is, it starts to talk about the inputs. I'm curious, Roland, are there pieces of evidence that suggest that financial incentives on inputs work for different sub populations? Do they work better for boys than girls? Do they work for particular economic groups?

MR. FRYER: They tend to work for, and this is probably why it was so natural for me to think about it, they tend to work for bad behaving boys as a general rule. And it's one of the few interventions actually in education reform that I've seen that works better for boys than for girls.

So, yeah, there are certain sub populations, but we have a, you know, these are six experiments, there needs to be 600 of them before we can have any definitive conclusions of how to think about this, right. I mean there's a ton of things we can do on the teacher side, there are a lot more things we can do on the student side with messaging and the things we were talking about before the panel today. And I think the key for me is, and I hope this is a reoccurring theme throughout the day, is to try stuff, measure it, and then repeat.

MR. GREENSTONE: I'd like – and this might be my academic hat on, but I just want to underscore that. I think one problem with education reform and reform of many systems, not just education, has been, there's an element of the merry-go-round, like ideas are popular, and they come around, and people get on them, and then the merry-go-round goes away, and they get off, and get on a new idea, and we never kind of learn what works and what doesn't, and I think that's part of what's so important about Roland's work.

You know, I think one way that they've tried to do that I think in medicine is, they've created these registries, which is any time you're going to try something new, you'll commit to doing it with a randomized control trial, you'll publish that you're doing that, you'll post that on the web or some public place, and then there's an expectation that there will be results, and if the results never come, I think that speaks for itself.

So I think that's one thing that has been especially exciting I think in the last ten years, is this combination of really creative thinkers, and access to new data sets, and increased computing – allowed for really a large increase, and we know it works, but I think what Roland was saying is important, which is, I think we're probably just scratching the surface. Like the master teacher thing sounds like a great idea, but like a lot of great ideas, it might not actually be. I have a lot of great parenting ideas all the time, you know, I'm below 50 percent, but above zero.

So I wanted to – Bob, you know, you've been doing some really creative work on kind of reconceiving how to – reconceptualizing schools kind of from the – as if you could build them from the beginning. In what way can these incentives or even students – and I know you've done a lot, you guys have focused a lot on high schools and a lot on younger kids, but I wonder if you think, would that population ----

MR. HUGHES: Well, we've talked a lot about that. I think Pete gets to an important point. When you start to look at adolescent incentives, you have to start to think about newer development, for example.

MR. GREENSTONE: Yeah.

MR. HUGHES: There's a lot of emerging work about reward pathways and kids, so the types of incentives you need may need to vary over time. I think your point about being cool or not cool, very important that the incentive structure actually meshes with the desires of young people. And I do think that there are a whole host of incentives that we don't take seriously. The communication stuff that we touched on a little bit, I think there will be a lot more coming out on that. But also questions of esteem and peer competition are giant, and we need to be thinking about those strategies, as well.

One final thing that I do want to – I think it's really important that we start to build a common language around this, as well as a registry. And so I can't sit on the stage without making a pitch for the common core, this idea that we are actually going to be studying the same things. Having kids know and be able to do the same things across multiple states means that we're going to have a much richer ability to study what work and doesn't work, and it's really crucial that we ensure that that occurs.

MR. GORMAN: Let me give just one real life experience related to what you just said.

So on Sunday I said to my daughter, I'm going to this conference, I'm going to be talking about incentives, one of the things was recognition, honey, how would you feel if an assembly – she was horrified, really horrified to think that she would be called up in front of her peers. And then when I asked her about it, I said, so for school work, she said yeah, and then I said, now, your softball, what if it was for, oh, no, that would be great. So it's even more nuanced –

MR. GREENSTONE: Right, yes.

MR. GORMAN: ---- than what we realize it is in that agitation for being recognized for a physical endeavor was cool for her, but not the other piece.

MR. GREENSTONE: One issue that I think will surface, and I believe it's the last panel on Derek Neal's important work, is when you set up incentive structures, people – it then creates a possibility for people to game the system in a way where they'll achieve whatever you incented, but not actually in this case maybe achieve mastery of the overall topic. I wondered if any of you guys would be interested in commenting on that and what – and I know you set up some incentive systems, so I think you've thought some about that, Pete.

MR. GORMAN: We did; I want to talk about one piece that was really kind of strange, that we didn't expect. With our teachers, one of the incentives for going to some of these turnaround schools that were doing good things was the fact that certain individuals wouldn't be present, and it was an incentive in a different way.

MR. MULGREW: There you go.

MR. GORMAN: But first and foremost, it was the controlling principal who was going to top down manage everything, and the second piece was, with the adults, we found a big driving force was, our finest teachers didn't want to be with poor performing teachers, that was a huge incentive for them.

Now, they didn't want to be self--policing, though, in that process, they wanted someone else to remove those individuals, but that made it incredibly attractive for them to go to that school, because what they said was, it'll be a true professional learning community where everyone will contribute, and what they said from there was, to take it to another point, and then they said, and in my

previous school, I would want you to evaluate me and judge me on my work alone, but now that everyone is up to a particular standard, I want to be done on the body and breadth of work we're doing as an entire group.

So in the work we've done in Charlotte, it's just – this is just incredibly nuanced, and you've got to dig and look and do what Roland is talking about, and then you've got to tell people what worked and what didn't, and that's painful.

MR.FRYER: I agree; I think incentive schemes are enormously complicated to think about the exact right one. I'll give you a quick story, Michael, I can't wait for this one. So my wife and I got a puppy two weeks ago, and so I decided I'll try another incentive experiment, and I really wanted him to go outside to the bathroom, and so I started giving him treats to do so, and when he realized this, my wife didn't do it, she said that's silly, so she doesn't do it.

With me now, it took him two days, and now he's decided instead of going to the restroom once, he'll go four or five times over a span of two minutes and he gets four or five treats and he thinks this is really great. So if an eight week old puppy can figure out my incentive scheme in two days, a 15 year old is going to figure it out in two minutes, right. And so we have to really, really think creatively about how to do this.

When we did our work in Houston and kids were mastering math objectives, right, and we aligned the incentives, the kids in the treatment group mastered one standard deviation, more math objectives than the kids in the control group, okay. That is a huge number, right. So we thought, oh my gosh, this experiment is going to be enormous, and when it came back to the actual results, the test scores did go up, but not nearly as much as we would have expected given the amount of math objectives, and the reading scores went down.

And so when you asked what happened is that, you know, in a fifth grade class, there's this kind of – there's no switching of classrooms, so, you know, the teacher would say, okay, put up your math books, it's time for English, and the kids would say, no, I need to master some more math objectives because I want to buy some sneakers.

And so there's always this trade-off, right, that you have to be really, really careful with. And again, as I tried to say, incentives can be very, very, very powerful, but in the same token, there can be pitfalls, and we have to be really, really creative how we design these incentives going forward.

MR. GREENSTONE: So incentivizing inputs are not the solution by themselves?

MR. FRYER: No.

MR. GREENSTONE: I mean in terms of solving this problem of teaching to the test or –

MR. FRYER: No, I think you have to – if you can find the right input, it's great. I think in Dallas we stumbled on a really great input, which was reading books, right, that was a great input, and, you know, it was done outside of class time, so it didn't actually crowd out what was going on inside the classroom. So that – we stumbled on something that had enormous power.

How you do that for math or for science and social studies, I don't pretend to know. I just want to keep it going forward. I mean what's problematic, as you said, the merry-go-round, some people have decided, looking at my work incentives are great, let's do it, others have decided, no, incentives are terrible, let's not do it, and I said I have no idea if they're good or bad, let's just keep thinking and honing, understanding of the potential power.

MR. GREENSTONE: I think maybe now is a good time to take some questions from the floor. I think we have them here.

SPEAKER: (off mike) ---- what you said about Dallas, and – programs have done in isolation that I know, I think a Texas teacher of the year in Dallas – teacher of the year. Since then, she's an incredible – she's become a teacher trainer, she did remarkable things with – reading – a whole bunch of teachers – some impact on this? I think it might. And, you know, you talk about how to bring in good teachers, put people into teaching, we have a core of great teachers who, at this point, are so – so unhappy most of the time and who are leaving the profession – talk about using the, you know – there's one other thing, there's a school in Oregon that I know, and they break all the records. Last year two of their students – graduating students got perfect scores on the SAT, I think that happened – but they – Harvard and MIT – public high school, but for the past three years –

MR. GREENSTONE: Thank you. I think we're going to do the rest of the questions from the cards. This is a question to everyone, although –

MR. FRYER: I would agree with you that there's not enough celebration of teachers. As I said, my grandmother was an educator for – a teacher for 35 years, my great aunt was a teacher for 51 years, both who raised me, and I would agree with you that there's not enough. I wouldn't agree that there's not any. And I work with lots of school districts, and, you know, I have seen great teachers celebrated, just not enough.

MR. HUGHES: I would add to that, there are emerging things. Fun for Teachers, a group out of Texas, is doing really interesting things where they let teachers actually define a semester that they can use themselves and give them money to do it, so their own professional development, their own travel, their own kind of work with their own students.

I think there are incentive structures that are very creative that can appeal to the intuitive reason why people go into teaching. It's not all just money, and we have to start to think about other ways of doing that.

MR. GREENSTONE: So to that point, one of the questions from the floor is, what do we know about uses and effects of non--pay incentives for students.

MR. HUGES: My mother used little stars on the refrigerator and that did okay with me.

MR. GREENSTONE: Yeah, I know, we used those, too.

MR. FRYER: My grandmother had an incentive program, it was called go get your own belt program.

MR. HUGHES: That's what happened when you didn't get the star.

MR. FRYER: Really popular on my street. So we've done two things in this regard, one of them we – when I was in New York, we partnered with Def Jam Records and L.A. Reid and had – I was meeting with L.A. Reid about something else, and his accountant came in in like army fatigues and this gold chain, and I was like, now that's what kids need to see, that this guy has got like an MBA from, you know, Yale, and he dresses like this.

And so we did this program where instead of – we didn't give kids financial incentives, but if they behaved and made certain test scores, they could go hang out at Def Jam Records and see all of their favorite musicians and hang out with the accountant, et cetera.

And the other thing we did in Oklahoma City was, instead of financial incentives, we actually gave encouraging messages over text message. So we gave all the kids cell phones, and the only reason we did that is so that we could keep in touch with them, and half of the kids, they got incentive minutes for doing well in school, the other half, they got encouraging messages regardless of how they did. So we just sent them and we partnered with a marketing firm that actually kind of did what I would consider edgy messages, but I agree, I'm not cool either. They said things like, you know, life expectancy is 72 years, that's a long time to be broke, go to school. That was rather encouraging. And to my surprise, the preliminary results that we're not ready to – these aren't ready for prime time, but the preliminary results are that all the treatments did well, but the actual encouragement, the actual text messages did more than the incentives.

So it could be that non--financial incentives through encouragement and other means, kind of like Michael was talking about, could be even more effective than financial incentives, we just don't know.

MR. GREENSTONE: Here's a question on teacher retention. President Obama's centerpiece on education is to revise the NCLB how can we attract and retain teachers to enter the teaching profession; is hiring teachers from other countries a good alternative?

MR. MULGREW: We've – we've done that in New York City. We've hired a bunch of teachers, we recruited in Austria, in the Caribbean. The results – it comes down to, if they were put in a school where they felt supported, where there's a proper work environment, they stay, if not, they leave, and it always comes down to that. We have schools in New York City who have retention rates of 95 percent over a ten year period, that's what I look at. I have other schools in New York City who have 20 percent retention rates over a ten year period. It clearly comes down to the culture and the climate of the school.

People get into this profession because of intrinsic values more than anything else and they want to make a difference, they want to help children learn, and they get – if they feel that they're in an environment where they're frustrated, where they didn't get the right – look, they go in unprepared to begin with, let's just put it on the table, they're going in completely unprepared for the job they're about to do, so if they're in an environment that's going to help them be successful with helping students, because

that's what drove them into the profession in the first place, then they're going to stay. But if they're in an environment that's not supporting them and helping them be – help students, then they leave. And you don't – I have seen nothing in NCLB that deals with that issue.

Incentivizing pay, moving – it's not what drives someone who gets into education. The basic instinct is, I want to help children, and if I cannot be successful in doing that, then I do not want to stay here.

MR. FRYER: But that's not really fair, because that's analyzing on a set of people who are already here.

MR. MULGREW: Uh--huh.

MR. FRYER: They chose to come because the pay is bad, that doesn't mean if you increase the pay, a whole more people wouldn't be interested, right. And so one question I have, Michael, would be, what about doing like the – kind of the obvious thing, which is, what about the barriers to entry into the profession? One of the things I think that frustrates me just as a citizen is that my Harvard undergraduates who major in chemistry can't actually go teach a chemistry class straight forward in New York City, but if they were to major in education and not take that many chemistry classes, they could teach chemistry, that just seems strange to me.

MR. MULGREW: Well, that's not correct.

MR. FRYER: Really?

MR. MULGREW: We have an alternative cert program, and if they have a chemistry degree, we can bring them in, and then all they have to do is say they will take the education credits after they start. I think alternative cert programs are very important, we've used them a great deal, and in terms of paying more, I mean we had an experimental charter school in New York City that starting salary was \$125,000, it really hasn't flushed out very well.

MR. FRYER: But didn't they get like 10,000 applications?

MR. MULGREW: But in the end, we still have to look at the issue itself. The alternative cert programs I think are something we need to look at. I was – I have an English Lit degree, I did not go and get an education, credits to later on. I think it's very important, especially when we're talking about career development for students, being college and career ready.

The ability to engage them in different tracks of study that we aren't traditional I think is something that should be growing through career and technical education. You're not going to get those teachers to education programs, you're going to have to get them from industry or from I'm a chemistry major, and I think that's something we should be looking at. But the pedagogical skills, we have to be able to deal with that issue also in terms of helping them get it. But you can go into New York City now, and if you have a chemistry degree, say I would like to – especially chemistry, it's a – well, actually probably not since it's not one of the tested part of their progress reports, so therefore, there are very few chemistry programs left anymore, but other areas we can.

MR. HUGHES: And can I just throw the one thing you said, which is, we're doing some work with TNTP, The New Teacher Project, looking at the retention of teachers, and what's interesting is, as a country we're fixated on that 40 percent value added data, but what we're finding is the 60 percent seems to be where teachers are retained or not retained.

MR. MULGREW: Right.

MR. HUGHES: And so young teachers who leave the profession are increasingly saying they wish they could stay if they felt their principal was giving them accurate feedback on a regular basis in their classrooms, and they felt that the school was invested in their success as a teacher. These are people we actually want to retain who are leaving the profession. So I think we have to start thinking about the management structures that we put in place and really incentivize leadership to make sure that they're in classrooms or providing the kinds of feedback that teachers need or restructure the principalship so that the business stuff which takes so much of a principal's time is put to the side so they can focus on what's going to lead to higher outcomes.

MR. GREENSTONE: So I'm going to give Pete the last question here. I think this has been just a fabulous discussion. I can't quite believe the incredible credentials of the people here, and a lot of really fantastic ideas have been flushed out. I think if we think about going ahead, just to repeat something I said, we're going to have to learn about which of these ideas work, and some great ideas don't always end up working.

In your role as a superintendent, are there challenges to like putting in a research and evaluation component directly into the budget and how would that work?

MR. GORMAN: Maybe we weren't normal in Charlotte, but our board dramatically supported us adding to our research and evaluation group over the last several years of budget cuts, because we gave them all of the data, we gave them the good and the bad, we actually showed that the worst after school program you could be involved with in Charlotte was the Charlotte--Mecklenburg Schools after school program, just the quality was just so poor, but creating that culture of where you share the good and the bad. And I think another piece that has to come with that, as well, is, there's not only got to be that direct reporting out, then you've got to go back and work on it and tweak it and not have the summary execution at noon the next day of everyone if something didn't work.

So we created a culture where you could try different things and where you had to have a component of how it would be evaluated and how we would bring back that information. What we typically found was, though, we never had enough information to completely declare something a success and decide we could replicate it everywhere. And what we found is, context matters, and it all came back to the quality of the people.

MR. GREENSTONE: Okay. Thank you. Can all of you join me in thanking the panelists of this fabulous discussion?

(Applause)