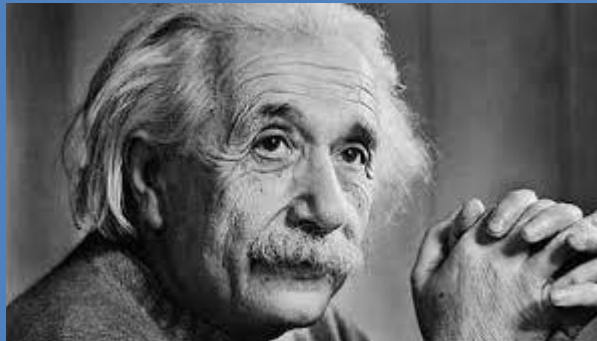


# THE EINSTEIN CHALLENGE

*The Einstein Project*

A Unique Public Private Partnership to Leverage the Knowledge of Austin's  
Science, Technology and Entrepreneurial Businesses to Create  
a Generation of Einstein's from Impoverished Youth of our City.



*As the Future  
Rapidly Approaches  
The Einstein Challenge  
is A Poverty  
Intervention Initiative  
of the Economic  
Development  
Department  
City of Austin*

October 2016

## The Einstein Challenge

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### Introduction

The Einstein Challenge is a public private economic and education partnership among Austin's high technology, creative and entrepreneurial companies to teach directly and indirectly by proxy, 40,000 children in poverty to create, a ***Generation of Einstein's***. Depending on your view this is either an Economic Development 401K or a GI Bill of sorts, but for children in poverty. Our challenge is to coordinate, volunteer or accept an incentive for economic service to tutor children in poverty for the next ten years.

In Austin we plan to add educational and mentoring resources, small property tax breaks, based upon the State of Texas Chapter 380 agreements, as a new, contracted, 10 year private investment system, to prevent unemployment before it happens. The output will be an end to end architecture for Science, Technology Engineering and Math (STEM) and creatives, and entrepreneurs, to include students, teachers, parents, employers and educational institutions. The intervention is designed to harness the knowledge of the scientific and entrepreneurial businesses of Austin and their brightest and most successful scientists and far seeing minds, to prepare our children in poverty for futuristic professions desired by every nation on earth. The careers will be geared to a niche market of jobs and positions that will pay approximately \$100,000 or more in target incomes.

Output will be

*an end-to-end  
architecture for*

Science, Technology  
Engineering and Math  
(STEM), creatives and  
entrepreneurs

Our economic purpose is to demonstrate monetarily, the return on investment (ROI) of downsizing poverty by 25%. This will be accomplished by mobilizing economic service from the expansive Austin innovation and entrepreneurial sectors to insure children in poverty have an opportunity to have futuristic and well-paying careers.

**Our companies are already engaged in major STEM and mentoring initiatives. Our goal is to expand and redirect that engagement to the schools and children in poverty in a measurable ROI.** We also anticipate that when this generation reaches adulthood, not only will the adults not be in poverty, but their children will no longer be in poverty, further reducing government expenditures and increasing the local tax base. This overall ROI is being measured economically by Texas Perspectives in terms of cost avoidance and taxes, and socially, in a collective impact model being developed by the University of Texas Ray Marshall Center.

The Einstein Challenge is a **bi-generational approach**, developed in cooperation with the City of Austin Health and Human Services and related assistance initiatives that help families whose children are

participating. The desired outcome is that within a period of ten years the public private partnership will create a generation of Einstein(s), taught by the most innovative companies in the world – right here in Austin, Texas. Imagine 40,000 children in poverty that become the most sought after innovation talent in America, a new future of Austin technology, innovation, leadership and Finance.

Additional resources from **the Einstein Challenge will target Title I schools in the City of Austin**. Just within the Austin Independent School District there are 54 Elementary Schools, 11 middle schools and 6 High Schools serving more than 22,400 students between grades 4-12. This population of economically disadvantaged students represent some of the most “at risk” youth in our community and the Einstein Challenge serves as an economic intervention for removing these students from a potential for a future of poverty, homelessness and generational economic struggles.

We have developed two economic ROI analyses to document the financial feasibility of the Einstein initiative. The first is the collective impact of the benefits of tutoring and entrepreneurship. The second is the monetary ROI associated with poverty reduction determined by calculating the cost savings to government of reducing poverty by 25% and the new wages and taxes generated. Tactically this system is the **Benefits Determination Process**.

## The Benefits Determination Process

### Tactical and Economic Evaluations

1. In a ten year longitudinal study, the Ray Marshall Center will **measure and evaluate the collective impact** of the benefits of tutoring, entrepreneurship, STEM and creative teaching of the children. Youth under age ten will not be evaluated. The balance of individual classes (4<sup>th</sup> – 14<sup>th</sup>) average 2100 students in poverty per age group / class in school.
2. Texas Perspectives (TXP) will **measure the monetary return on investment associated with poverty reduction** by documenting and forecasting cost savings to multiple areas of government, and increased earnings and the resulting taxes.

There is a 10-year University of Texas Ray Marshall Center longitudinal study that will apply a collective impact framework to the tutoring in order to capture annual progress to the economic goal and to identify and suggest changes.



The figure below summarizes the 3<sup>rd</sup> party independent analysis.

## RMC: Effective Evaluation

Ray Marshall Center (RMC) at the University of Texas Austin

### Apply a **Collective Impact** Framework

Engage with city, school district, and business leaders to develop a shared vision of the problem and the solution. Take existing programs, differentiate efforts and coordinate a joint plan of action so currently isolated efforts become mutually reinforcing activities. Work with partners to develop consensus metrics, collect information, and regularly report aggregate data to improve program efficiency and build upon the regional vision.

### Measure and Evaluate

Using a collection of surveys, school data, college enrollment and workforce data, Ray Marshall Center researchers will measure whether: individual programs meet their goals, efforts increase long term interest in STEM fields, benefits of programs extend to improvements in academic and behavioral performance, and participants eventually enroll in college and earn a living wage.



40,000 children  
in poverty

*Einstein Challenge  
Economic Purpose:  
Downsizing Poverty  
by 25%*

One cost saving described in the figure below is in the category of social service delivery services. The net City of Austin (COA) gain, is cost savings combined with increased taxes generated at different wage levels. For example, poverty children who reach adulthood and earned the average salary of Travis County wages (\$48,001) would net the City of Austin a revenue gain of \$38 million, while those who

achieved careers paying \$98,000, the average salary of technology jobs, would net the City of Austin \$70 million. Our objective is to improve the lives of the children in poverty and also to provide children the opportunity to obtain the highest salaries and the top performing careers. In addition to helping the children transcend poverty and to prosper financially and in health, their success in turn provides the City of Austin, Travis County, Texas and the federal government the largest ROI.

*As you can see the monetary ROI in a successful Einstein Challenge initiative could generate as much as \$70 million annually, in the best case scenario.*

## The Return on Investment (ROI)

What if non whites and whites made similar incomes? A Sample of the savings in one cost category:  
 Net COA Annual Gain = Avoided Social Service Delivery Costs + ROI in new taxes generated

- Align the poverty rate of non-Whites to Whites – 40,000+ households
- Rising incomes address a range of costs that accrue to society and different government jurisdictions – the focus here is on City of Austin (COA)
- COA realizes net gains via avoided social services program costs and tax revenue due to higher incomes – see below.

Poverty Level	Per Household Income gain	Total Additional income	COA General Fund	Avoided COA Program Costs	Net COA Annual gain
up to 100%	\$7,124	\$293,413,545	\$4,568,266	\$4,354,002	\$8,922,268
150%	\$14,295	\$588,753,580	\$9,166,526	\$6,129,603	\$15,296,129
200%	\$21,466	\$884,093,615	\$13,764,786	\$6,921,880	\$20,686,666
To Reach Household Avg.	\$48,001	\$1,976,982,851	\$30,780,390	\$7,235,015	\$38,015,405
To Reach Technology Household Ave.	\$98,000	\$4,036,255,899	\$62,841,988	\$7,235,015	\$70,077,003

- If the Non-White poverty rate made equal to White poverty rate, the 40,000+ households who would benefit could realize as much as \$2 billion (\$2015) in additional annual income, contributing to a net gain (via increased tax revenue and reduced means-tested social services program costs) of over \$38 million to COA each year.
- If non-White poverty children realized adulthood with jobs paying \$98,000 (average 2015 salary of technology jobs in Austin) the net COA annual gain amounts to \$76,000,000.

Source: TXP, Inc.

The third party monetary analysis above was performed by economic forecasting firm TXP Inc. Looking at the totality of the government cost savings and increased tax base due to reducing poverty in Austin by 25%, while elevating the careers of 40,000 children currently in poverty will increase the ROI exponentially.

Federal, State, County, and local governments participate in underwriting the costs of poverty. Considering all subsidies, costs and potential tax revenues generated, an Economic Development *preliminary* forecast is an ROI of approximately \$50,000 per year, for working careers for a head of household (age 18 – 68), over a fifty year career period. This compares conservatively with the federal estimate of \$61,000 per year from the U.S. Senate Budget Committee for the cost of poverty per head of household nationwide. The federal cost estimate is over a trillion dollars per year in subsidies to ameliorate the conditions of poverty.

In a subsequent analyses, performed by Texas Perspectives, we envision requesting this ROI being calculated locally *avoiding*: subsidized housing for 40,000 future heads of households, subsidized Austin Energy heating and cooling and weatherization costs for the same number, reduced health and human service delivery and medical care for that population, reduced subsidies for food stamps, transportation, day care, the criminal justice system and savings for the cost of jails and prisons for the 40,000 children moved out of poverty as adults. We will consider the new wages and taxes generated as part of this monetary ROI calculation. For this ROI,  $40,000 \times \$50,000$  each annually  $\times 50$  years, the projected government ROI is (\$) $1e+11$  in the Austin city limits alone resulting in (Einstein project ROI = (\$) $1e+11$  for 40,000 children). The preliminary government cost savings and ROI for this one generation becoming self-sufficient head of households is \$100 billion.

For *national replication*, today, there are approximately 15.2 million children in poverty. Eliminating their “future” lifetime subsidized government costs would produce an ROI of (\$) $3.8e+13$  nationally. Using the Einstein Challenge solutions to reduce government costs and increase ROI is a new business model for municipal, county, state and federal agencies to balance their budgets. The resulting new revenues and savings can be seen as a valuable financial element in balancing government budgets. As a type of Economic Development 401k, it potentially offers governments the added resources for parks and open space, libraries, water, roads, transit, technology, infrastructure, reduced taxes, resources to address homeless, veteran and elderly social issues, or a combination.

## Monetizing the Outcomes with New Measurements

There are a minimum of six returns on investment (ROI) “factors” that will be measured as economic justification for this investment:

- 1.) The number of youth removed from poverty permanently.
- 2.) The number of youth achieving a scientific or business related college degree.
- 3.) The number of youth obtaining employment in futuristic professions – which will be evaluated in terms of the leadership, startup companies created and the overall impact on our Economy.
- 4.) The amount of wages and taxes generated by significant salaries of the youth in technology careers who otherwise would have remained in poverty,
- 5.) The *amount of dollars saved by the government*, in monetized cost avoidance as a result of persons removed from poverty, and
- 6.) New leadership models delivered by the creation of a generation of brilliant youth scientists, entrepreneurs and creators that demonstrate the opportunities and promise of America.



## Evaluation

Evaluation of this performance based initiative will be coordinated with the **Ray Marshall Center at the University of Texas in a ten year longitudinal study of program return on investment outcomes.** The investors who are participating include the City of Austin, all local Chambers of Commerce, the Workforce nonprofits, the school system and universities, the City of Toronto Canada and most importantly *leading global businesses located in Austin.*



The process will be inclusionary. Our philosophy is that we are technology and entrepreneurship agnostic. Taught professions will be based upon data driven forecasts of high income careers available or forecasted using Socrates and similar employment software. This is being done in direct consultation with the scientific and innovative companies where the jobs are to be created. The City of Austin Economic Development Department, in cooperation with the Ray Marshall Center at the University of Texas, with partners such as IC2 at UT, Austin Technology Council, TXP Inc. and others, will prepare annual reports and recommendations to the Mayor and City Council and interested parties each year. Findings will be evaluated for areas of refinement so that the economic strategy can evolve to include new industry groups, new internships, and newer and effective education strategies.

In order to encourage student participation we plan to develop multi media advertising in schools to offer tutoring, and where age appropriate, internships to the children grades 4<sup>th</sup> - 14 to inspire the Einstein Challenge tutoring and educational opportunities within the schools.

Within the overall population of 40,000 children in poverty there are 2100 - 2500 children in each age category. Therefore children 1 – 9 years would not be the primary focus. Gradual increasing tutorials, internships and STEM and creatives and entrepreneurship training would occur from grades 4 and on.

The Austin Technology Council is in agreement to focus on grades 4 -7 with quarterly and monthly hands on professional involvement. This first piece of the puzzle of tutoring will increase yearly to illustrate exciting careers and potential salaries, as well as the learning itself. School websites would include pertinent multimedia information for children, families and teachers to discuss.

## Summary: Resetting the Austin Intelligence Economy

Kiplinger news ranks Austin the #1 City for the Next Decade. Forbes Magazine calls Austin #1, “The Place to Be.” Austin is the nation’s top economy and fastest growing metropolitan area. Yet it is experiencing rapidly growing poverty, estimated by the Brookings Institute at the 2<sup>nd</sup> fastest growing suburban poverty in the United States.

It is with these contradictions in mind, and the clear understanding that as Austin citizens we have the unlimited potential to affect change in poverty by harnessing our economic prosperity to create a new future for our children, that we share this inclusive strategic vision for a bi-generational economic plan.

Our contention is that an economic intervention on the next generation of poverty is necessary and profitable. And replacing it with very well paying jobs and a futuristic workforce will generate a positive return on investment for the City of Austin and its residents. In the Einstein Challenge, technology, creatives and entrepreneurial businesses will act both by contract and voluntarily.

The performance based economic system generated by the Einstein Challenge will consensually allow us as a municipality and as private sector partners, to measure success and enable such changes as are necessary to occur promptly and economically.

Public involvement and crowd sourced ideas to improve and evolve the Einstein Challenge are encouraged. Today we are seeking your suggestions and guidance to address these challenges and to seize upon the opportunities of our world class economic prosperity. Your assistance is appreciated.

The Einstein Challenge **goals** are:

1. To transform a minimum of 40,000 children who are currently in poverty into an educated technology savvy workforce that can lead Austin and the US in the rapidly approaching future;
2. To contract performance and voluntary based participation of an array of science, creative, entrepreneurial and global companies in STEM, through incentives for economic service, or voluntary activity;
3. To select futuristic target careers through data driven forecasts of innovation opportunities in *industries of the mind* and their high paying jobs;
4. To mobilize the private sector science and entrepreneurial companies and their leadership to have their brightest minds teach in cooperation with science teachers, hands on business projects that can be taught to the youth;
5. To advertise industries of the mind to inspire parents of and Austin’s youth - on the economic benefits and satisfaction in science careers 4 – 7: science lectures, videos, projects led from nonprofits and schools from local technology firms;



6. To provide hands on paid internships in grades 8 - 12, that produce real time science case studies and resources and,
7. To provide predictable long term financing to city government and residents through the exponential and increasing ROI due to the reduced cost of subsidizing poverty and increased taxes generated from the same population;
8. To provide increasing public private revenues to schools and nonprofit STEM training enterprises over the ten year longitudinal span being evaluated to provide economic return on investment data;
9. To increase family disposable income for families in poverty, and
10. To provide an exit from poverty strategy to children in poverty through a larger private revenue stream aiding residents formerly in poverty and now gainfully employed in high end employment or through owning entrepreneurial and technology based companies in Austin.

Our ultimate goal is creating a generation of Einstein(s) from Austin's impoverished children in our neighborhoods and communities. The Einstein Challenge will give our children, an opportunity for a prosperous future.

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