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ELECTRONICALLY TRANSMITTED

Deborah Fowler, Esq.
Executive Director
Texas Appleseed
1609 Shoal Creek, Suite 201
Austin, Texas 78701

> Re: The Inverse Relationship Between the Frequency of Truancy Charges and the Proportion Disadvantaged Groups Comprise of Persons Subject to Truancy Charges

Dear Ms. Fowler:

On occasion I write to institutions or organizations whose activities involve the interpretation of data on demographic differences in the law or the social or medical sciences alerting them to ways in which their interpretations are undermined by the failure to understand patterns by which standard measures of differences between favorable or adverse outcome rates of advantaged and disadvantaged groups – or differences between the proportion a group comprises of persons potentially experiencing an outcome and the proportion it comprises of persons actually experiencing the outcome – tend to be systematically affected by the overall frequency of an outcome. Recipients of other letters involving measurement issues discussed in this letter include Robert Wood Johnson Foundation (Apr. 8, 2009),[1] National Quality Forum (Oct. 22, 2009), Institute of Medicine (June 1, 2010), The Commonwealth Fund (June 1, 2010), United States Department of Education (Apr. 18, 2012), United States Department of Justice (Apr. 23, 2012), Board of Governors or the Federal Reserve System (Mar. 4, 2013), Harvard University (Oct. 9, 2012), Harvard Medical School, Massachusetts General Hospital, et al. (Oct. 26, 2012), Mailman School of Public Health of Columbia University (May 24, 2013), Investigations and Oversight Subcommittee of House Finance Committee (Dec. 4, 2013), Education Trust (April 30, 2014), Annie E. Casey Foundation (May 13, 2014), Institute of Medicine II (May 28, 2014), IDEA Data Center (Aug. 11, 2014), Education Law Center (Aug. 14, 2014), Financial Markets and Community Investment Program, Government Accountability Office (Sept. 9, 2014), Wisconsin Council on Families and Children's Race to Equity Project

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[1] To facilitate consideration of issues raised in letters such as this I include links to referenced materials in electronic copies of the letters. All such letters may be found by means of the Institutional Correspondence subpage of the Measuring Health Disparities page of jpscanlan.com.

(Dec. 23, 2014), Portland, Oregon Board of Education (Feb. 25, 2015), Vermont Senate Committee on Education (Feb. 26, 2015), United States Department of Justice and City of Ferguson, Missouri (Mar. 9, 2015) and Senate Committee on Health, Education, Labor and Pensions II (Mar. 20, 2015). An *amicus curiae* brief I filed on November 17, 2014, in *Texas Department of Housing and Community Development, et al. v. The Inclusive Communities Project, Inc*., Sup. Ct. No. 13-1371 (TDHCD brief), might be deemed a similar communication to the United States Supreme Court.

This letter is immediately prompted by review of Texas Appleseed's March 2015 report titled "Class, Not Court – Reconsidering Texas' Criminalization of Truancy." The report expressed the view that truancy charges were brought in Texas courts too frequently and that such charges disproportionately affected certain demographic groups. The report illustrated the disproportionality with charts and tables showing that certain demographic groups comprised a higher proportion of persons subject to truancy charges than they comprised of enrolled students. The report did not state how it would measure the extent of the disproportionality reflected by those proportions (though it made several references to the variations in the perceived size of such disproportionality). The report also in two places (at 62, 70) characterized the size of disparities in terms of risk ratios or the associated relative differences between rates of being subject to truancy charges.

I explain below that regardless of how one measures disproportionality on the basis of the proportion a group comprises of enrolled students (the pool) and the proportion it comprises of persons subject to truancy charges, reducing the frequency of such charges will tend to increase that disproportionately. I also show that reducing the frequency of truancy charges will tend to increase relative differences between rates of being subject to such charges.

Inherent in the shapes of other than highly irregular risk distributions are patterns by which standard measures of differences between outcome rates tend to be systematically affected by the frequency of an outcome. The pattern most pertinent to analyses in the Texas Appleseed March 2015 truancy report is that whereby the rarer an outcome the greater tend to be relative differences between rates of experiencing it and the smaller tend to be relative differences between rates of avoiding it.   A corollary to that pattern is a pattern whereby the rarer an outcome the greater tend to be the proportions groups most susceptible to the outcome comprise of (a) persons experiencing the outcome and (b) persons avoiding the outcome.

I illustrate these patterns in Table 1 below, which is a variation on Table 1 of the above-referenced TDHCD brief (at 9), Table 1 of my recent "Race and Mortality Revisited," *Society* (July/Aug. 2014), and Table 1 of March 20, 2015 letter to the Senate Committee on Health, Education, Labor and Pensions. The table also reflects the hypothetical set out in my "Things government doesn't know about racial disparities," *The Hill* (Jan. 28, 2014), "The Paradox of Lowering Standards," *Baltimore Sun* (Aug. 5, 2013), and "Misunderstanding of Statistics Leads to Misguided Law Enforcement Policies," *Amstat News* (Dec. 2012), each of which, like the recent Senate letter and the Section titled "Lending and Discipline Disparities" in "Race and

Mortality Revisited" (at 341-43), addresses the mistaken belief that generally reducing public school discipline rates will tend to reduce relative demographic differences in discipline rates.

The rows of the table show that lowering a test cutoff, while reducing the relative difference between the rates at which a higher-scoring group (AG, for advantaged group) and a lower-scoring group (DG, for disadvantaged group) pass a test, increases the relative difference between rates at which the groups fail the test.[2] The final two columns, which present for each cutoff the proportions DG comprises of persons passing the test and the proportion DG comprises of persons failing the test, show how lowering the cutoff increases each of these proportions. The illustration is based on a situation where DG comprises 50% of test takers, though the actual proportion DG comprises of test takers is irrelevant to the pattern whereby lowering the cutoff causes tends to increase the proportion DG comprises of those who pass and the proportion DG comprises of those who fail.

Table 1. Illustration of effects on relative differences in pass and fail rates of lowering a cutoff from a point where 80% of AG passes to a point where 95% of AG passes, with proportions DG comprises of persons who pass and of persons who fail (when mean scores differ by approximately half a standard deviation and DG comprises 50% of test takers),

Cutoff	AG Pass	DG Pass	AG Fail	DG Fail	AG/DG Pass Ratio	DG/AG Fail Ratio	DG Prop of Pass	DG Prop of Fail
High	80%	63%	20%	37%	1.27	1.85	44%	65%
Low	95%	87%	5%	13%	1.09	2.60	48%	72%

Another simple tabular illustration of the pattern whereby reducing overall rates of experiencing an outcome tends to increase relative differences in experiencing the outcome while reducing relative differences between rates of avoiding the outcome may be found in Table 2 of the above-mentioned "Race and Mortality Revisited" (at 330). That table shows that generally reducing poverty will tend to increase relative differences between black and white poverty rates while reducing relative differences between black and white rates of avoiding poverty. Table 1 of my "Can We Actually Measure Health Disparities?," *Chance* (Spring 2006) (from which Table 2 of "Race and Mortality Revisited" is excerpted) shows the proportions African Americans comprise of persons above and below each income level shown in Table 2 of "Race and Mortality Revisited."

Given that reductions in the frequency of an outcome increase the proportion groups more susceptible to an outcome comprise of persons experiencing the outcome, while leaving the proportion such groups comprise of the pool unchanged, reductions in the frequency of an outcome will tend to increase both the relative difference and the absolute difference between the proportion the group comprises of the pool and the proportion it comprises of persons

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[2] The illustration is cast in terms of (a) the ratio of AG's pass rate to DG's pass rate and (b) DG's fail rate to AG's fail rate. The relative differences would be the rate ratios (also termed risk ratio) minus 1.

experiencing the outcome. This pattern, which is discussed in Section I.B of the TDHCD brief (at 23-27), is illustrated in columns (c) and (d) of Table 11(d) (at 58) of my "The Mismeasure of Discrimination," Methods Workshop, Center for Demographic and Social Analysis, University of California, Irvine (Jan. 20, 2015). See also the tables in the IDEA Data Center Disproportionality Guide subpage of the Discipline Disparities page of jpscanlan.com.[3]

There a number of additional problems with measurement approaches based on the proportion a group comprises of the pool and the proportion of it comprises of persons experiencing an outcome (rather than based each group's actual outcome rate), as discussed in the IDEA Data Center Disproportionality Guide subpage and Section I.B of the TDHCD brief.[4] But, as discussed above, it is important to understand that relative differences between those outcome rates tend to increase as the frequency of an outcome decreases. Whether reducing the frequency of an outcome can be deemed in fact to reduce the disparate impact of the procedure at issue is addressed in Section I.A.3 (at 20-23) of the TDHCD brief and Section E (at 27-32) of "The Mismeasure of Discrimination," Faculty Workshop, University of Kansas School of Law (Sept. 20, 2013).

With regard to the general applicability of the above-described patterns, I call your attention to the above-mentioned TDHCD brief (regarding the fair lending context) as well as

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[3] It is important to distinguish between (a) the absolute difference between the rates of advantaged and disadvantaged groups from (b) and the absolute difference between the proportion a group comprises of the pool and the proportion it comprises of persons experiencing the outcome. For reasons explained in "Race and Mortality Revisited," at least in the rate ranges commonly at issue in the school discipline context, as the frequency of an outcome changes, the absolute difference between rates of the advantaged group and the disadvantaged group and the relative difference between those rates will tend to change in opposite directions. But, as the frequency of the outcome changes, the absolute difference between the proportion a group comprises of the pool and the proportion it comprises of persons experiencing an outcome will tend to change in the same direction as the relative difference between the proportion a group comprise of the pool and the proportion it comprises of persons experiencing the outcome. See the referenced Table 11(d) from the Cal Irvine workshop.

[4] One problem mentioned in the IDEA Data Center Guide subpage, which is pertinent to both (a) comparing a group's rate with an overall rate and (b) comparing the proportion a group comprises of the pool with the proportion it comprises of persons experiencing an outcome, is that such comparisons may fail to identify situations where the Hispanic rate, while lower than the overall rate, is greater than the white rate. There can also be situations where the black rate, while lower than the overall rate, is greater than the white rate. The mention in the March 2015 report (at 74) that disproportionality in Failure to Attend School (FTA) charges did not in all cases disproportionately affect African Americans students or Hispanic students was apparently based on the various instances shown in the table where the proportion those groups comprises of persons subject to FTA filings was smaller than the proportion they comprised of enrolled students. While the statements in the report was true, it warrants note that most of the departures from the usual patterns involved situations where, though the minority group's rate was lower than overall rate (a corollary to the fact that the proportion the minority group comprised of students subject to FTA filings was lower than the proportion it comprised of enrolled students), the minority group rate's rate was higher than the white rate (as in the case of African Americans in Northside ISD, Austin ISD, and Lewisville ISD, and Hispanics in Dallas ISD). Appraisals of demographic disparities should always be based on comparison of the circumstances of a disadvantaged group with that of the predominant advantaged group (which usually will be whites, though not in every case (see Table 2 of the Los Angeles SWPBS subpage of the Discipline Disparities page)), not on comparison with an overall population of which the disadvantaged group is a part.

"Race and Mortality Revisited" (regarding varied contexts).   Many graphical and tabular illustrations of the patterns from a range of settings may be found in the Cal Irvine Workshop mentioned above, as well as in my "The Mismeasure of Group Differences in the Law and the Social and Medical Sciences," Applied Statistics Workshop, Institute for Quantitative Social Science at Harvard University (Oct. 17, 2012) and like workshops given between 2012 and 2014 at arms of American University, University of Minnesota, University of Maryland, George Mason University, and University of California, Irvine.

I also call your attention to web pages on jpscanlan.com discussing data showing that recent reductions in public school discipline rates have in fact been accompanied by increased relative racial/ethnic differences in discipline rates in the states of Connecticut, Maryland, Minnesota, and Rhode Island and the cities/counties of Los Angeles, Denver, St. Paul, Minneapolis, Beaverton (OR), Portland (OR), Montgomery County (MD), and Henrico County (VA). Perhaps most pertinent to the issue addressed in the March 2015 truancy report is the discussion on Los Angeles page regarding the fact that reductions in ticketing for truancy were accompanied by increased relative differences in ticketing rates. For reasons stated above, the increases in relative differences between outcome rates necessarily mean increases in both relative and absolute differences between the proportion a group comprises of the pool and the proportion it comprises of persons experiencing the outcome.

Finally, as with the letters listed in the first paragraph, this letter is intended principally to address issues problems in the measurement of group differences as a result of the failure to recognize the ways that standard measures of disparity (whether involving comparison of outcome rates of advantaged and disadvantaged groups or comparisons of the proportion a group comprises of the pool and the proportion it comprises of persons experiencing an outcome) tend to be systematically affected by the frequency of an outcome. But, inasmuch as the efficacy of court enforced truancy policies is an important issue, I feel compelled to note that I do not find the analysis of such issue in the report to be persuasive. Advantaged educational settings with engaged students tend to have high rates for favorable outcome like meeting proficiency levels and graduating and low rates for adverse outcomes including truancy. That will tend to cause low truancy filing rates to be associated with low adverse outcome rates even when the court enforcement of truancy is having a generally beneficial effect (or, more pertinently, having such an effect on the at-risk segment of students, as discussed below). So, unless I have overlooked some aspect of the referenced study that addresses such matter, I believe that the analysis of this issue in the report, like the substantial body of work showing high public school suspension rates to be associated with negative school environments, does not provide useful insight into the efficacy of the practices at issue. See the APA Zero Tolerance Study subpage of the Discipline Disparities.[5]

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[5] The Sweeten study discussed at page 75 of the report appears to be one of the better efforts to adjust for the characteristics that would tend otherwise to cause a spurious relationship between the court involvement and adverse educational outcomes. I am not in a position to form an opinion on whether it did so adequately. But the study's efforts to indentify interactions would seem to implicate the issues addressed on the Subgroup Effects subpage of the Scanlan's Rule page of jpscanlan.com.

The same considerations apply to efforts to appraise the efficacy of other interventions aimed at reducing truancy. In the case of the types of intervention that the report seems to favor, however, it may well be that the types of districts with resources to implement such interventions may be sufficiently advantaged districts that a spurious favorable effect of the intervention may be observed.

I also suggest, however, that appraisals of efficacy of any type of program that examine outcome rates for the entire district may show little impact from even the most beneficial or detrimental interventions to address truancy problems. The overall attendance rate, for example, is (I assume) driven by the overwhelming majority of students who never have an unexcused absence (or never more than one) and to whom the policies aimed at chronic truancy are irrelevant. But there will be some segment of students in each district who are at risk for chronic truancy and it is the effect that a particular policy has on that group warrants examination. Even a strong effect, whether positive or negative, will likely be obscured in an analyses that examines effects on the entire student population.

The at-risk segment of students is likely to be overwhelmingly comprised of certain disadvantaged groups. I do not know that such fact implicates a particular disparities issue in the search for an effective means of addressing the truancy problem in that segment. Any attention to a disparities issues in that context, however, ought to be informed by recognition that, absent a complete solution to the problem, the more effective the means of addressing the problem, the greater will tend to be relative demographic differences between rates at which members of advantaged and disadvantaged groups continue to have a problem and the larger will tend to be the proportion disadvantaged groups comprise of persons continuing to have the problem.

Sincerely,

/s/ James P. Scanlan

James P. Scanlan