EXHIBIT B

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

STUDENTS FOR FAIR ADMISSIONS, INC.,	
Plaintiff,	
v.	Civil Action No. 1:14-cv-14176-ADB
PRESIDENT AND FELLOWS OF HARVARD COLLEGE (HARVARD CORPORATION),	
Defendant.	

REBUTTAL EXPERT REPORT OF RICHARD D. KAHLENBERG

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I.   **Executive Summary**

In my opening expert report, I outlined the several ways in which Harvard could use race-neutral alternatives to achieve the educational benefits of racial, ethnic, and socioeconomic diversity.[1] In response, Harvard's proffered expert witnesses, Professor David Card and President Ruth Simmons, submitted reports suggesting, among other things, that race-neutral strategies would be unworkable.[2] In this rebuttal report, I refute their assertions.

My opening report reached three conclusions: (1) experience and academic research show that selective colleges and universities can maintain or increase diversity through race-neutral strategies without sacrificing academic quality; (2) Harvard failed to fully consider numerous race-neutral strategies, including increasing socioeconomic preferences, increasing financial aid, eliminating preferences that favor non-minorities, utilizing geographic diversity, increasing recruitment, increasing community college transfers, and ending early admissions; and (3) simulations of Harvard's data demonstrate that race-neutral alternatives exist.

Highlights of my rebuttal report are as follows:

- Harvard's experts failed to rebut the substantial body of research and experience finding that a variety of viable race-neutral alternatives are available to highly selective institutions such as Harvard.

- Harvard's witnesses do not—and cannot—dispute that Harvard failed to take *any* meaningful steps to comply with its obligation to seriously consider race-neutral alternatives before the advent of this lawsuit.

- Harvard's witnesses failed to discredit a powerful menu of race-neutral alternatives. These strategies, when used in tandem with one another, can produce the educational benefits of diversity without resorting to racial preferences.

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[1] Report of Richard D. Kahlenberg, Students for Fair Admissions, Inc. v. President and Fellows of Harvard College, October 16, 2017.

[2] Report of David Card, Students for Fair Admissions, Inc. v. President and Fellows of Harvard College, December 15, 2017; and Report of Ruth Simmons, Students for Fair Admissions, Inc. v. President and Fellows of Harvard College, December 15, 2017.

- Simulations of race-neutral alternatives using actual Harvard applicant data show that Harvard has at its disposal multiple race-neutral pathways that would sustain and even boost diversity while maintaining Harvard's excellence along many dimensions.

II.   **Harvard's Witnesses Fail To Refute the Substantial Body of Evidence Showing That Selective Colleges and Universities Can Maintain or Increase Diversity Through Race-Neutral Strategies Without Sacrificing Academic Quality.**

In my opening report, I discussed extensive evidence from academic research and the experience of selective colleges that race-neutral alternatives to racial preferences can produce the educational benefits of diversity.[3] In response, Card claims the academic research does not support the viability of race-neutral strategies and that the most selective colleges—those most closely resembling Harvard—have not been able to sustain diversity. Card's analysis is wrong on both counts.[4]

A.   **Card incorrectly concludes that most research fails to find viable race-neutral strategies.**

To begin, Card cites studies by Thomas Kane and Sean Reardon finding that using income instead of race in admissions will not produce the same level of racial diversity.[5] But these studies are of little value here because they measure only the use of income and not, as I propose, a *broad* set of socioeconomic variables, such as neighborhoods or family wealth, which better capture the effects of racial discrimination.[6]

Next, Card cites a variety of studies by researchers finding that racial preferences are more "efficient" at producing a given level of racial diversity than race-neutral strategies.[7] These studies make the pedestrian point that if a school wants to obtain a certain racial

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[3] Kahlenberg Report, pp. 5-10.

[4] In setting forth my opinion in this rebuttal report, I have not relied on any materials other than those identified herein or in the original report.

[5] Card Report, p. 97.

[6] Kahlenberg Report, pp. 17-19.

[7] Card Report, pp. 98-101.

admission level, then the most direct way to do so is through the use of racial preferences. But administrative convenience is not the goal of this exercise. We examine race-neutral alternatives in order to *avoid* using racial classifications, because "[d]istinctions between citizens solely because of their ancestry are by their very nature odious to a free people, and therefore are contrary to our traditions and hence constitutionally suspect."[8] A school thus must examine whether a nonracial approach could promote a substantial interest "about as well" and at "tolerable administrative expense."[9] Card's studies also ignore the obvious point that a plan that produces additional socioeconomic diversity, alongside racial diversity, should not be characterized as "inefficient."[10]

Finally, Card claims that a number of the studies I cite actually undermine my position about the viability of race-neutral alternatives.[11] Card quotes Gaertner to suggest there are academic costs associated with class-based affirmative action because the college GPAs and graduation rates of class-based admits lag behind other students.[12] But Card fails to mention that Gaertner concludes that low-income students do about as well academically as underrepresented minority students admitted through race-based affirmative action programs.[13] And Gaertner argues that academic support for low-income students should be the proper response, not ceasing to admit such students.[14]

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[8] Fisher v. Univ. of Texas, 133 S. Ct. 2411, 2418 (2013) (citations and quotations omitted).

[9] Fisher, 133 S. Ct. at 2420 (quotation omitted).

[10] See infra Section IV.

[11] Kahlenberg Report, pp. 11-13 (discussing studies by Matthew Gaertner, Anthony Carnevale, and Sigal Alon).

[12] Card Report, p. 101 n.160.

[13] Matthew N. Gaernter, "Advancing College Access with Class-Based Affirmative Action: The Colorado Case," in Richard D. Kahlenberg (ed), The Future of Affirmative Action after Fisher v. University of Texas (Century Foundation/Lumina Foundation, 2014), p. 184.

[14] Gaertner, "Advancing College Access," pp. 184-185.

Card also quotes a 2004 study by Anthony Carnevale and Stephen Rose concluding that "[w]hile socioeconomic preferences help produce some racial diversity, a credible procedure that can reproduce the level of racial diversity that exists in society today without purposefully singling out African Americans and Hispanics at some point in the selection process has yet to be found."[15] But Card fails to mention that ten years later, these same professors found two alternatives that produced *greater* racial diversity and *higher* mean SAT scores than the current system of racial preferences.[16]

Next, Card notes that simulations by Sigal Alon "do not consistently show that African-American and Hispanic representation would meet or exceed the levels achieved by considering race," and that one of Alon's simulations results in "a decline in academic selectivity."[17] These statements are true, but largely unhelpful. The U.S. Supreme Court has never suggested that *every* race-neutral alternative must be viable, but rather that universities cannot employ race preferences unless "*no* workable race-neutral alternatives would produce the educational benefits of diversity."[18] (emphasis supplied). The point is that race-neutral alternatives have been found to be successful. Indeed, even Alon herself has found a workable race-neutral alternative, which I cited in my opening report.[19]

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[15] Card Report, p. 102.

[16] Kahlenberg Report, pp. 11-12 (describing Carnevale simulations to (a) provide a socioeconomic preference in admissions and (b) admit the top 10% of high school test takers).

[17] Card Report, p. 102.

[18] Fisher, 133 S. Ct. at 2420.

[19] Kahlenberg Report, p. 13 (describing Alon simulation which effectively eliminates legacy, athletic, and racial preferences and provides a socioeconomic preference)

B.   **Card incorrectly claims race-neutral strategies are ineffective at highly selective colleges such as Harvard.**

In his report, Card acknowledges that the majority of flagship universities in a 2014 Century Foundation study were able to maintain or exceed black and Hispanic enrollment with race-neutral strategies, but he discounts this finding by noting that the most highly selective public colleges in the study—"UC-Berkeley, Michigan and UCLA, the schools most similar to Harvard"—had the most difficulty maintaining racial diversity.[20] As I note in my opening report, however, this study analyzed what these selective colleges *did* to increase racial diversity, not what they *could have done*. As I explained, each of these universities could have done more to promote diversity by, for example, using a wealth variable in admissions.[21]

In addition, UC Berkeley, UCLA, and Michigan faced a special disadvantage in recruiting minority students because they were prohibited by state law from using racial preferences, but their competitors were not. These three institutions have a national pool of applicants and compete against other colleges and universities that are not subject to similar prohibitions. If *all* schools were playing by the same rules, then the outcomes at UC Berkeley, UCLA, and Michigan would have been very different.

III.   Harvard's Experts Cannot Refute Harvard's Complete Failure To Fully Consider Numerous Race-Neutral Strategies.

In my opening report, I noted that despite the clear instructions of the U.S. Supreme Court that universities must demonstrate that "no workable alternatives would produce the educational benefits of diversity," Harvard conducted no such investigation until the advent of this litigation.[22] No formal analysis was conducted of the effects of moving to a race-blind

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[20] Card Report, p. 99.

[21] Kahlenberg Report, pp. 7-9.

[22] Fisher, 133 S. Ct. at 2420.

system or of the feasibility of using alternatives, such as socioeconomic status. I suggested that the sum total of Harvard's investigation appears to have been the creation of a disbanded committee led by Dean James Ryan and the establishment of a three-member committee that as of August 3, 2017, had met only once.[23]

Tellingly, Card and Simmons do nothing whatsoever in their reports to address this stunning failure to take the elementary steps required by the law. In point of fact, there were numerous alternatives available, which Harvard could have adopted. I discuss these options below.

A.   Socioeconomic Preferences

My opening report outlined extensive evidence showing that Harvard could increase racial and ethnic diversity by increasing socioeconomic preferences. I provided evidence that (1) socioeconomic factors (especially wealth) are highly correlated with race; (2) Harvard's socioeconomic diversity is deeply lacking; (3) Harvard does not give its admissions officers access to critical income and wealth data that could be used to implement a race-neutral alternative; and (4) Harvard could increase the weight it provides to socioeconomic status compared to race. (My report also included a simulation of socioeconomic preferences conducted by Arcidiacono—to which Card responds—which I discuss separately in part IV of this report.)

Card makes no serious effort to dispute my first three points: that socioeconomic status (especially wealth) is highly correlated with race; that Harvard is lacking in socioeconomic diversity; or that Harvard admissions officers are denied access to critical data through a system of "need-blind" admissions. Instead, Card focuses on the fourth point: the

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[23] Kahlenberg Report, p. 16.

relative weight provided to race versus "context variables," which includes socioeconomic status. Card claims that Harvard already gives significant consideration to "contextual factors" (including socioeconomic status) that are larger in magnitude than considerations of race and ethnicity.[24] As explain below, that is not true.

In my report, I cite evidence from Arcidiacono's regression analysis showing that the coefficient signifying the preference Harvard provides for African-American students (2.569) is substantially larger than that provided for Disadvantaged students (1.083) or First-Generation students (0.023).[25] Importantly, Card does not conduct a similar analysis specifically comparing the impact of these variables. Instead, Card suggests race plays a small role and that "contextual factors" (which include socioeconomic status) matter much more. Specifically, Card claims that "contextual factors . . . such as College Board high school and neighborhood variables, parental occupation, and intended career—explain more about admissions decisions than race."[26] In Card's analysis, the McFadden Pseudo R-Squared for Context Variables is 0.13, the Detailed High School and Neighborhood Variables (a subset of the Context Variables) is 0.06, and the impact of Race is a mere 0.002.[27] Card concludes that "race alone explains almost nothing about admissions outcomes."[28]

In his rebuttal expert report, Arcidiacono explains why his model is superior to Card's model and thus why his results are more reliable. But even accepting Card's numbers as true, Card's conclusions are problematic for several reasons.[29]

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[24] Card Report, p. 82-83.

[25] Kahlenberg Report, p. 27.

[26] Card Report, p. 82.

[27] Card Report, p. 83, Ex. 27.

[28] Card Report, p. 82.

[29] See Peter Arcidiacono Rebuttal Report, January 29, 2018, sections 3, 7-9.

First, Card's claim that "race alone explains almost nothing about admissions outcomes" is difficult to square with his other conclusion that African-American and Hispanic admissions would plummet without racial preferences. Card concludes: "if Harvard did not consider race in the admissions process . . . the share of African-American students in the admitted class would drop from 14% to 6%. The fraction of Hispanic or Other students would fall from 14% to 9%."[30] And "[t]he fraction of admitted students who are Asian-American would *rise* from 24% to 27%."[31] His simulation thus demonstrates that race *does* have a substantial role in admissions, and it calls into question his earlier claim that "race alone explains almost nothing about admissions outcomes."[32]

Second, Card's analysis that contextual factors matter much more than race in admissions does not square with the regression analysis performed by Harvard's own Office of Institutional Research, which found that the coefficient for African Americans (2.37) was more than twice as large as the coefficient for Income Less than $60,000 (0.98).[33]

Third, Card's findings are at odds with the findings of several studies of elite colleges, which consistently conclude that race plays a much larger role in college admissions than socioeconomic status.[34] Card does not address this dissonance.

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[30] Card Report, p. 103.

[31] Card Report, p. 103 (emphasis added).

[32] Card Report, p. 82.

[33] Kahlenberg Report, p. 26.

[34] Kahlenberg Report, pp. 28-29 (citing four studies of supporters of racial preferences).

B.   Increasing Financial Aid

In my opening report, I explained that Harvard could attract more racial and socioeconomic diversity by increasing its commitment to financial aid. I also showed that Harvard—which has a $37.1 billion endowment—likely could afford such a commitment.[35]

Card does not contest Harvard's ability to increase financial aid. Indeed, in his analysis of one of Arcidiacono's simulations of socioeconomic preferences, he estimated that financial aid would have to increase by $62 million per year (above Harvard's current $170 million commitment to financial aid).[36] Professor Card himself provides data to suggest this additional $62 million commitment would represent a 26.7% increase, far smaller than the 75% increase in aid Harvard has absorbed in the years between 2007 and 2017.[37]

Instead, Card suggests that financial aid increases, by themselves, are unlikely to be effective in increasing the applications of African-American and Latino students. Analyzing historical application data, Card claims that "[s]hare[s] of African-American, Hispanic or Other applicants rose, then plateaued, as Harvard expanded financial aid."[38] The initial increases in financial aid for the classes of 2008, 2010, and 2012 did result in increases in the underrepresented minority share of all applicants, Card says, but the effect appears to have been tapped out. Citing the change in financial aid rules for the class of 2016, Card says: "Importantly, the most recent expansion of financial aid did not result in an increase in the share of AHO [African American, Hispanic, or Other] applicants."[39]

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[35] Kahlenberg Report, pp. 29-31.

[36] Card Report, p. 153 & n.220.

[37] Card Report, p. 153 n.220. The additional $62 million commitment projected would also be smaller in absolute terms than Harvard's earlier multiyear increase of $73.4 million.

[38] Card Report, p. 142.

[39] Card Report, p. 141-142.

Card's analysis has two major weaknesses. First, my opening report never suggested that increasing financial aid is a stand-alone strategy that would automatically increase racial diversity. Increasing financial aid succeeds when done in *combination* with other strategies—including the use of socioeconomic preferences, more aggressive recruiting efforts, and the like.

Second, the historical data presented by Card actually suggest the opposite of what he contends. Boosts in financial aid *did* have a positive impact on the share of applicants who are underrepresented minorities in Harvard's classes of 2008, 2010, and 2012.

It is true that applications did not increase after the class of 2016 change, which Card characterizes as "the most recent expansion of financial aid."[40] But for the class of 2016, Harvard's new policy had the effect of *reducing* the amount of money spent on financial aid. For the class of 2016, Harvard coupled a small increase in the income cutoff for students requiring no parental contribution (from $60,000 to $65,000—less than 10%) with what a Harvard financial aid officer described as a "scaled back" commitment to providing aid for families making between $150,000 and $180,000. The overall savings for Harvard from these two changes was projected to be $46 million for the freshman entering the class of 2022.[41]

C.   Eliminating Preferences for Non-Minorities

In my opening report, I discussed extensive evidence that Harvard currently provides considerable preferences in admissions to several categories of students who are disproportionately wealthy and white: the children of alumni, of donors, and of faculty and staff. Many of these students are admitted through Harvard's special Z-list of applicants—

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[40] Card Report, p. 141.

[41] Kahlenberg Report, pp. 29-30.

where Harvard admits a student (most often the child of an alumni) on the condition that the student enroll the following year (a practice Card euphemistically calls "deferred admission").[42] Eliminating these various preferences and practices would increase racial, ethnic, and socioeconomic diversity.

Card and Simmons do not dispute that preferences are provided to students who fall into these various categories. Nor do they dispute that being the child of an alumni, a donor, or faculty or staff has nothing to do with the individual merit of applicants but rather the actions of their parents. Instead, Card and Simmons make two broad claims: that eliminating these preferences would (1) not increase racial diversity, and (2) harm Harvard's ability to provide an excellent education. Both claims are flawed.

With respect to Card, he does *not* simulate the racial impact of eliminating the specific practices I outlined in my report—preferences for the children of alumni, donors, faculty and staff, and those admitted through the Z-list. Instead, he presents results for eliminating "the consideration of race, lineage, athletic-recruit status, whether an applicant's parents are Harvard faculty and staff, and the Dean's and Director's interest lists."[43] He finds that under these scenarios the share of African Americans would drop from 14% to 5%, and the share of Hispanic and other from 14% to 9%.[44]

Card's analysis is problematic in a couple of respects.

First, Card includes in the composite simulation the elimination of athletic preferences, which is an option I specifically rejected.[45] Removing athletic preferences is sometimes

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[42] See Kahlenberg Report, pp. 34-36; Card Report, p. 104.

[43] Card Report, p. 105, Exhibit 35.

[44] Card Report, p. 105, Exhibit 35.

[45] Kahlenberg Report, p. 46.

perceived as radical, so it is peculiar that Card insisted on eliminating the preference in his model.[46] Second, the elimination of preferences that tend to favor wealthy and white students was not meant to be a stand-alone race-neutral alternative; ending those preferences would have the most power in connection with other race-neutral alternatives (such as socioeconomic preferences and/or geographic approaches), as Card's subsequent simulations acknowledge.

In Simmons' testimony, she claims that ending legacy preferences would entail "substantial costs" for Harvard, and that there are "strong reasons" to employ preferences for the children of faculty as a way of retaining talent. She said she makes these statements "[b]ased on my experience."[47] Tellingly, President Simmons cites not a single study or empirical analysis of either statement. Nor does she seek to rebut or in any way discredit the 2010 study I included in my opening report that examined legacy preferences at 100 universities and found "no evidence that legacy preference policies themselves exert an influence on giving behavior."[48]

Simmons also does not deny that excellent institutions such as Oxford, Cambridge, UC Berkeley, and UCLA admit exceptional students and provide superb educations without using legacy preferences.[49]

Tellingly, with respect to preferences for the children of donors, Simmons provides no defense whatsoever.

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[46] Harvard's own expert, President Simmons, argues, "Based on my many decades of experience in higher education, it is also clear to me that athletics plays an important role on college campuses in the United States. Athletic competition is a deeply engrained part of the history and traditions at many our nation's finest institutions of higher education, including Harvard." See Simmons Report, p. 22.

[47] Simmons Report, pp. 20-22.

[48] Kahlenberg Report, pp. 32-33.

[49] Kahlenberg Report, p. 32.

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Finally, Simmons cites no study to suggest that giving the children of faculty a preference makes a meaningful difference in strengthening the education universities can provide or that giving the children of professors an advantage in the admissions process is critical for retention. Nor am I aware of any. Indeed, it strains credulity to assert that an individual would turn down the opportunity to teach at Harvard without the promise of admission preferences for his or her children.

The bottom line is that Harvard employs extensive preferences for some of society's most privileged children—the offspring of alumni, donors, and faculty—and those advantages disproportionately harm low-income and underrepresented minority students.[50] The attempts of Harvard's experts to defend these practices fall short in all respects.

D.   Utilizing Geographic Diversity

In my opening report, I identified a number of universities that employ place-based or geographic approaches to admissions.[51] The University of Texas and the University of Florida have been particularly successful in creating high-quality and racially and socioeconomically diverse student populations by admitting top students within each high school in the state. Because Harvard has a national pool of applicants and does not draw most of its students from a single state, I discussed Harvard professor Danielle Allen's suggestion of admitting top students by Zip Code. In my report I provided a variation on this approach: taking top students from each of several "neighborhood clusters" identified by the College Board.[52]

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[50] Kahlenberg Report, p. 36.

[51] Kahlenberg Report, pp. 36-39.

[52] Kahlenberg Report, pp. 36-39.

Card dismisses this idea as impractical for Harvard.[53] Because there are many types of excellence, he says, it is impossible to identify the "best" student in various locations. Moreover, he claims, given Harvard's size (fewer than 1,700 students in each class) it is impractical to literally take the top student from each of every one of the nation's 41,000 high schools or the more than 33,000 Zip Codes (or even the 7,500 high schools and 4,000 cities and towns represented in Harvard's applicant pool for the class of 2019).[54]

My place-based approach, however, is far less radical than Card makes it out to be. While it is always difficult to discern the "best" students, Harvard nevertheless every year assembles a class with students it considers excellent in many regards. Moreover, Harvard has long committed itself to creating a class that has geographic diversity, which, if taken seriously, requires identifying excellence in its many forms with consideration of place as a factor.[55]

The race-neutral strategy I outline simply holds Harvard to its stated commitment to geographic diversity in a more rigorous fashion that it currently does.[56] Unlike the Texas top 10% plan, which bases admissions on class rank via high school GPA, Harvard could continue to identify excellent students holistically as it currently does (*i.e.*, considering race-neutral

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[53] Card Report pp. 128-129. Card also suggest it would be unworkable based on simulations. Card Report, pp. 130-139. For example, Card models a version of Arcidiacono's Simulation 4 by providing a socioeconomic preference within neighborhood clusters. Card Report, p. 135, Exhibit 51. But Card's results do not call into question Arcidiacono's results because Card eliminates consideration of test scores as well as athlete preferences, and therefore departs from Arcidiacono's simulation in meaningful ways. Card Report, p. 134.

[54] Card Report, pp. 128-129.

[55] See, e.g., Regents v. Univ. of Calif. v. Bakke, 438 U.S. 265, 316, 379 (1978) (quoting the "Harvard plan" in which "the race of an applicant may tip the balance in his favor just as geographic origin or a life spent on a farm may tip the balance in other candidates' cases. A farm boy from Idaho can bring something to Harvard College that a Bostonian cannot offer."); Simmons Report, Appendix, HARV00008052, Report of the Committee to Study the Importance of Student Body Diversity (chaired by Rakesh Khurana) (noting the importance of "geographic" diversity).

[56] Kahlenberg Report, p. 36 (Noting that Harvard currently does a relatively poor job of seeking geographic diversity. Some 37% of Americans and 55% of African Americans live in the American South, yet only 18.8% of the class of 2021 hails from the South.)

criteria like grades, test scores, extracurricular activities, athletics, etc.). Although Harvard could not literally take an equal number of students from each and every high school or Zip Code, it could easily seek excellence and socio-geographic diversity by enrolling top students from all of the College Board's 33 "Educational Neighborhood Clusters," as we model, or some variation of Harvard's choosing.[57]

E.   Increasing Recruitment

In my opening report, I noted that Harvard could do a much better job of recruiting economically disadvantaged applicants, many of whom are underrepresented minorities.[58] Although 68% of adults in the United States ages 45-54 lack a college degree, only 12.5% of Harvard applicants for the classes of 2007-2011 had parents without a college degree. For the class of 2009, for example, nearly half of very high-achieving, high-income students applied to Harvard, compared with less than a quarter of very high-achieving, low-income students.[59]

Card, by contrast, lauds Harvard's current recruitment efforts. According to Card, "Harvard already well understands the need to engage in outreach, and already engages in extensive efforts on this front."[60] Citing a number of such programs, Card claims it is "unlikely" that Harvard could double the number of disadvantaged applicants. He further suggests it would be especially hard to recruit new disadvantaged students who "would be as qualified as current applicants."[61]

Card's claim is unsupported for multiple reasons.

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[57] This is precisely the model we simulated in the original report. See Kahlenberg Report, pp. 48-50. Alternatively, Harvard could create its own buckets of Zip Codes and seek to admit top students from each of the buckets.

[58] Kahlenberg Report, pp. 39-40.

[59] Kahlenberg Report, pp, 39-40.

[60] Card Report, p. 120.

[61] Card Report, pp. 120-122.

First, Card's report itself confirms that Harvard—the nation's oldest and wealthiest university—could do far more to attract applicants. According to Card, for the class of 2019, Harvard received applications from only 7,561 of the nation's 41,368 high schools.[62] In other words, 82% of American high schools have *not a single applicant* to Harvard, one of the world's best known colleges.

Second, doubling the applicants to Harvard from disadvantaged students would be a modest accomplishment given the enormous disparity Harvard currently faces in its applicant pool. Doubling the number of applicants from first generation students (now 12.5%) would still leave first generation applicants grossly underutilized in a country where 68% of adults ages 45-54 lack a college degree.

Third, on the question of whether Harvard could attract more highly qualified disadvantaged applicants, Card does not dispute the evidence from Stanford Professor Caroline Hoxby and Harvard professor Christopher Avery that "there is a pool of talented low-income students who do not apply to selective institutions."[63] Hoxby and Avery identify 35,000 high-ability low-income students, of which only one-third apply to a selective college. Of all low-income high-achieving students, roughly 2,000 are African American and 2,700 are Hispanic.[64] More recently, research by Anthony Carnevale and Martin Van Der Werf of Georgetown University identified 86,000 Pell Grant recipients who have test scores comparable to those of students at selective colleges but who do not now attend such

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[62] Card Report, p. 130, Exhibit 48.

[63] Card Report, p. 122 n.198.

[64] Kahlenberg Report, p. 14.

institutions. These high-achieving, low-income students include 5,160 who are Hispanic and 2,580 who are African American.[65]

F.   Increasing Community College Transfers.

In my opening report, I demonstrated that Harvard could increase racial, ethnic, and socioeconomic diversity by increasing transfers from community colleges, institutions that are far more likely to have underrepresented minority and low-income students than Harvard. This is an approach employed by a number of highly selective private and public institutions to promote diversity.[66]

Card rejects this approach for two reasons: (1) this policy "is not likely to be effective" because current transfer students are less diverse than regular applicants; and (2) allowing more transfers "would be a dramatic change" for Harvard because so few students drop out of Harvard that the only way to make space would be to reduce the size of the freshman class.[67] Card's assertions are problematic on both fronts.

First, the racial makeup of current transfers to Harvard is not particularly relevant. To begin with, the sample size is very small, due to Harvard's current policy limiting transfers. Moreover, almost all were transfers from four-year colleges. For the classes of 2014-2019, only two community college students transferred to Harvard.[68] Card does not dispute the national data showing that community colleges are far more likely to have underrepresented minority and low-income students. Second, increasing community college transfers would not

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[65] Anthony P. Carnevale & Martin Van Der Werf, "The 20% Solution: Selective Colleges Can Afford to Admit More Pell Grant Recipients" (Georgetown Univ. Center on Education and the Workforce, 2017), pp. 9 and 12, Figures 4 and 5.

[66] Kahlenberg Report, pp. 41-42.

[67] Card Report, p. 119.

[68] Kahlenberg Report, p. 41.

necessarily require smaller freshman classes if Harvard were willing to modestly increase the size of its junior and senior classes. For example, Amherst College, a highly competitive private college with an undergraduate enrollment of 1790, has increased the number of community college students transfers from 0 or 1 per year prior to 2006 to 12-15 per year.[69] Like Harvard, Amherst has a very high retention rate (96% in 2016-2017).[70] But to accommodate the change, Amherst did not reduce the size of its freshman class; indeed, the freshman class has expanded since 2006.[71] Finally, my contention is not that community college transfers alone is the answer; it is that increasing the number of community college students at Harvard is one piece of a larger solution to moving away from a system in which a student's race is a factor in whether he or she is admitted to college.

G.   Ending Early Admissions

In my opening report, I concluded that Harvard could increase its racial and socioeconomic diversity by dropping its early admissions program, which disproportionately benefits wealthy and white students.[72] Indeed, Harvard eliminated early admissions (before reinstating it later) for this very reason, concluding that "[a]n early admission program that is less accessible to students from modest economic backgrounds operates at cross-purposes with our goal of finding and admitting the most talented students from across the economic

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[69] Jennifer Glynn, "Opening Doors: How Selective Colleges and Universities are Expanding Access for High-Achieving, Low-Income students," (Jack Kent Cooke Foundation, April 2017), p. 37.

[70] Amherst College, Common Data Set 2017-2018, p. 4,
https://www.amherst.edu/system/files/B%2520Enrollment%2520and%2520Persistence_2.pdf.

[71] Scott Jaschik, "Size Matters: From Amherst to Pomona, liberal arts colleges are increasing enrollments—and trying to keep a small college environment," Inside Higher Ed, February 24, 2006 (regarding Amherst's plan to expand its freshman class by 15-25 students per year), https://www.insidehighered.com/news/2006/02/24/libarts.

[72] Kahlenberg Report, pp. 42-44.

spectrum."[73] Both Card and Simmons, however, defend Harvard's current use of early admissions.

Card does not dispute the evidence showing that those applying through early admission are more likely to be accepted and that such applicants are disproportionately wealthy and white.[74] Instead, Card seeks to question the efficacy of eliminating early admissions by examining application and admission shares for underrepresented minority students during the period of time when Harvard dropped and then subsequently reinstated early admissions. He suggests this historical pattern represents a "natural experiment" to test the effect of early admissions.[75] He concludes that reinstating early admissions did not decrease the number of underrepresented minorities applying to or admitted by Harvard.[76]

But Card's method of analysis—drawing causal inferences from the changes in early admissions policies (its abolition for the class of 2012 and its reinstatement for the class of 2016)—is problematic. Early admissions were not the only changes during this time period that might have affected applications and admissions. As Card himself notes, changes in financial aid rules were also implemented during these years.[77] Numerous other factors could have come into play, including demographic changes in the population of high school seniors, fluctuations in the state of the economy that affect whether students will apply, changes in Harvard's recruitment efforts and those of its competitors, and changes in the weight Harvard or others may have applied to various preferences. In short, it is exceedingly difficult to isolate the independent effect of the change in early admissions policies.

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[73] Kahlenberg Report, p. 43 (quoting Dean Fitzsimmons).

[74] Card Report, p. 146.

[75] Card Report, p. 146.

[76] Card Report, pp. 148-150.

[77] Card Report, pp. 141-145.

Given the difficulty in drawing conclusions based on the historical patterns, it would be preferable to simulate the effect of turning off the early admissions preference on admissions shares for underrepresented minorities. Card, however, declines to do so because he says Harvard values early admissions.[78] By contrast, in modeling presented below, Arcidiacono turns early admissions off and demonstrates a positive racial dividend.

Similarly, Simmons claims that eliminating early action "would have substantial costs" and that she rejected such an approach when she was President of Brown University for fear of "losing out on some of our most talented students" to competitor institutions.[79] But this argument is also weak. Simmons cites no studies to support her claim and no anecdotal evidence or reasoning to show why her belief is justified. Moreover, her focus on losing talented students to other colleges ignores the principle issue: that many low-income and minority students are at a disadvantage because they lack counselors telling them to apply early.

IV.   Simulations of Harvard's Data Demonstrate That Race-Neutral Alternatives Exist.

In my opening report, I discussed findings from a number of race-neutral simulations that Professor Arcidiacono conducted at my request. In his report, Professor Card conducted a number of additional simulations predicting the effect of various race-neutral alternatives. As Arcidiacono explains in his rebuttal report, there are a number of problems with how Card constructed his dataset. Because it is Harvard's burden to show that there is not a *single* race-neutral alternative that can produce the educational benefits of diversity, I need not discuss every simulation Card creates.[80]

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[78] Card Report, p. 150 n.219.

[79] Simmons Report, p. 22.

[80] I thus do not dispute that some of the simulations Card produced are unsatisfactory. See, e.g., Card Report, p. 108, Exhibit 36 (for 1x low-SES boost); Card Report, p. 133, Exhibit 50 (taking top students from every low-income high school).

Instead, in this section, I show that (1) Card incorrectly concludes that Arcidiacono Simulation 4 and Card's Simulation 4x are not viable race-neutral alternatives; and (2) a new simulation from Card's model (Simulation 6) demonstrates viable race-neutral alternatives.

Broadly speaking, the simulations that Card and Arcidiacono separately ran can be placed into one of three buckets: (1) simulations that did not produce satisfactory results, either because overall diversity suffered or academic selectiveness was seriously impaired; (2) simulations that did produce satisfactory results but were nevertheless rejected by Professor Card because he used faulty criteria for evaluating the outcomes; or (3) new simulations produced for this report that produce satisfactory results.

In considering these various simulations, it is important to remember the heavy burden Card faces: if *a single* race-neutral alternative can produce adequate results, race cannot be employed by Harvard.[81] Card cannot carry that burden here.

A.   Card incorrectly concludes that Arcidiacono Simulation 4 and Card's Simulation 4x are not viable race-neutral alternatives.

Contrary to Card's report, some of the simulations do produce satisfactory results. I will highlight two in particular, one from Arcidiacono and one from Card. Elsewhere, Arcidiacono explains why his model is superior to Card's.[82] But by highlighting results from each of the two models, my conclusion here does not depend upon which model is ultimately deemed preferable.

In Arcidiacono's Simulation 4, he ranks students based on their Harvard ratings; turns off race and other preferences; provides a new preference to socioeconomically disadvantaged

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[81] Fisher, 133 S. Ct. at 2420 (examining whether "no workable race-neutral alternatives would produce the educational benefits of diversity").

[82] Arcidiacono Rebuttal Report, section 3, 7-9.

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students; and admits top students from each of 33 College Board Neighborhood Clusters.[83]

Looking at the admitted class of 2019, the percentage of underrepresented minority students basically holds steady, with Hispanic students rising from 12.9% to 13.5% of the class and African-American students declining from 13.6% to 10.1%. Socioeconomic diversity increases, as the economically disadvantaged population rises from 17.4% to 54.3%. The academic index remains fairly stable, changing from 227.8 to 225.9—well above the average academic index for African-American students and athletes, all of whom, Harvard's president testified, are able to "thrive and succeed" at Harvard.[84]

In Card's model with a socioeconomic preference 4x relative to the baseline, he follows Arcidiacono's model in most respects. But instead of admitting students in equal shares by Neighborhood Cluster, he provides a socioeconomic preference that includes neighborhood characteristics. He applies this weight four times.[85] Under this model, underrepresented minority admitted shares basically hold steady at 27% for the class of 2019 (10% African

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[83] More specifically, Arcidiacono uses Harvard's four-part rating system (including academics, extracurricular activities, athletics, and personal rating), and turns off the preferences for race, athlete, legacy, early decision, faculty and staff children, the Dean/Director list, fee waiver, first generation, and financial aid recipients. He then turns the preference for athlete back on, and provides a new preference (half the size of the athletic preference) for students tagged as economically disadvantaged. Then Arcidiacono admits top students in each of 33 College Board Neighborhood Clusters.

Card makes an error in describing Simulation 4. He says the simulation "repeats Simulation 3" yet allows athletes to retain preferences, but that is incorrect. Card Report, p. 152. Simulation 3 involves no socioeconomic preference and instead simulates an admission system involving the top students from each Neighborhood Cluster. Simulation 4 involves a socioeconomic preference within each Neighborhood Cluster.

[84] Kahlenberg Report, pp. 49-51.

[85] More specifically, Card starts with Harvard's four-part rating system (including academics, extracurricular activities, athletics and personal rating), and turns off the various preferences as Professor Arcidiacono does. And he provides a socioeconomic preference for economically disadvantaged students. But here Card makes several departures. First, he leaves the athlete preference off. Second, he abandons the system of admitting top students by Neighborhood Cluster. Third, rather than providing a preference for students tagged disadvantaged, he provides an equally weighted preference to students with each of the following four socioeconomic factors: 1) tagged economically disadvantaged; 2) eligible for fee waiver; 3) first generation college; and 4) from neighborhoods with a median income below $65,000. Card Report, pp. 105-106. The 4x preference is roughly equivalent to the preference Professor Arcidiacono and I simulated, according to Card. See Card Report, p. 108-109 & n.177.

American and 17% Hispanic and Other), very similar to the status quo's 28% share of underrepresented minorities (14% African American and 14% Hispanic and Other).[86] The share of disadvantaged students increases from 17.7% to 52.1%.[87] The Academic Index sees a small decline, from 228 to 225.[88]

Card claims that Arcidiacono's Simulation #4 is unsatisfactory because, among other things, it results in a small decline in African-American student representation; because legacy children would decline as a fraction of the student body; because the percentage of students expected to concentrate in biological sciences would rise; and because the increase in socioeconomic diversity would require the expenditure of $62 million more in financial aid. He concludes, "I find that Mr. Kahlenberg's proposed race-neutral alternatives do a poor job of generating racial diversity, while also coming at a cost in terms of other class characteristics I understand Harvard values."[89]

Likewise, Card rejects his own 4x weight for SES as unsatisfactory. Even though it would replicate the total population of underrepresented minorities, as he acknowledges, he alleges that "numerous measures of excellence in Harvard's class would drop substantially."[90] He cites, among other things, declines in the fraction of students rated academically excellent, the proportion who are children of alumni, the share who are athletes, and the fraction

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[86] Card Report, p. 108, Exhibit 36.

[87] Card Report, p. 113, Exhibit 39. Although a 52.1% "disadvantaged" population might seem large, Harvard's definition of disadvantaged encompasses more than two-thirds of American students. See Kahlenberg Report, p. 49.

[88] Card Report, p. 111, Exhibit 38.

[89] Card Report, p. 153.

[90] Card Report, p. 109-110.

intending to concentrate in the humanities or social sciences. He also noted the amount

Harvard would have to spend on financial aid would increase by $59-$71 million.[91]

Professor Card's rejection of these alternatives is fundamentally flawed because (1) it

is at odds with the way Harvard itself describes the educational benefits of diversity; (2) it is in

conflict with the way Harvard itself evaluates the importance of academic criteria; and (3) other

measures cited, such as a modest change in the expected majors of incoming students, are too

trivial to justify differential treatment by race.[92]

1. Arcidiacono Simulation 4 and Card Simulation 4x both produce the educational benefits of racial, socioeconomic, and geographic diversity.

First, in evaluating simulations of race-neutral alternatives, Card does not appear to

appreciate the meaning of the educational benefits of diversity, as outlined both by the U.S.

Supreme Court and by Harvard College. The Supreme Court has long recognized that the

educational benefits of diversity flow not only from racial diversity but from other factors,

such as socioeconomic diversity and geographic diversity.[93] Harvard officials have also

recognized that socioeconomic and geographic diversity are critical to the education of

students.[94] Indeed, Simmons's expert report includes as an appendix the Report of the

Committee to Study the Importance of Student Body Diversity (chaired by Rakesh Khurana),

which declares that diversity has "[m]ultiple [d]imensions," including socioeconomic and

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[91] Card Report, pp. 110-112.

[92] Card also raises a fourth concern—that race-neutral alternatives would increase financial aid costs—but he never claims that Harvard could not afford this additional expense. See discussion supra. As I noted in my opening report, Harvard officials repeatedly testified that their financial aid budget was not capped. Kahlenberg Report, p. 30.

[93] See, e.g., Grutter v. Bollinger, 539 U.S. 306, 324 (2003); Bakke, 438 U.S. at 316.

[94] See, e.g., Fitzsimmons deposition, pp. 421-424; McGrath deposition, p. 231; Faust deposition, p. 196; Khurana deposition, pp. 66, 75; Smith deposition, p. 48; Bakke, 438 U.S. 316 (on "geographic" diversity); Simmons Report, Appendix, HARV00008052, Report of the Committee to Study the Importance of Student Body Diversity (chaired by Rakesh Khurana) (noting the importance of "geographic" diversity).

geographic. "Harvard's students should be children of the 'rich and poor,' the 'educated and uneducated.'"[95] The report also indicates: "As is true for other demographic characteristics such as race, the life experiences of low-income students have been shaped by their circumstances. They add healthy pluralism to the campus and, as part of the alchemy that results from a diverse student body, benefit from and contribute to an enriched educational experience of everyone."[96]

Given this broad conception of diversity, it is jarring that Professor Card's report does not consider diversity as a whole (including its racial, socioeconomic, and geographic components) in evaluating the costs and benefits of various race-neutral strategies. To the contrary, he treats increases in socioeconomic diversity as a liability rather than a benefit—a cost to Harvard College's bottom line.[97] As I outlined in my opening report, Harvard is grossly lacking in socioeconomic diversity, with 23 times as many high-income students as low-income students.[98] Under the models, such as Card's 4x socioeconomic boost, Harvard would see a much-needed increase in the educational benefits of socioeconomic diversity. The proportion of first generation college students, for example, would increase from 7.2% to 25.5%—a very positive change which surely should be weighed against any small declines in racial diversity.[99]

Card also fails to highlight in his discussion major gains in geographic diversity that his own data suggest would occur under his 4x socioeconomic preference plan. The

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[95] Simmons Report, Appendix, HARV00008063.

[96] Simmons Report, Appendix, HARV00008064.

[97] See, e.g., Card Report, p. 153 (Simulation 4 "would increase Harvard's [financial aid] spending by about $62 million per year"); Card report, p. 112 (Card's 4x socioeconomic model "would likely increase the financial need of the accepted class" and "could necessitate an increase in Harvard's financial spending by roughly $59-71 million per year.").

[98] Kahlenberg Report, pp. 20-23.

[99] Card Report, p. 113, Exhibit 39. At 25.5%, Harvard would still be underrepresented among first generation students in a country where 68% of adults lack a college degree. See Kahlenberg Report, p. 22 n.75.

proportion of students in the Midwest, South, West, and rural America would all see increases, while the greatly overrepresented Northeast would see a decline.[100]

Finally, throughout his report, Card seems to assume that the current level of racial diversity Harvard has achieved is the minimum level required to achieve the educational benefits of diversity. Card rejects as inadequate any race-neutral alternative that produces anything less than the threshold of racial diversity achieved under the status quo's application of racial preferences. But this is at odds with Harvard President Drew Faust's own testimony that Harvard is not looking for any particular racial composition.[101]

2. Arcidiacono Simulation 4 and Card Simulation 4x do not harm academic preparation.

Card's concerns about changes in the academic preparedness of students under race-neutral alternatives are also unwarranted. To begin, the changes in the academic profile of students are very small under both Arcidiacono's Simulation 4 and Card's 4x socioeconomic preference. Under Arcidiacono's Simulation 4, Card reports that the mean SAT score for admitted students would decline from 2239 to 2191 for the class of 2019.[102] In 2014, when applicants were taking the SAT, that drop represented just a single percentile point, from the 99th to 98th percentile.[103] Meanwhile, average high school GPA actually *increases* slightly, from 77.0 to 77.1.[104]

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[100] Card Report, p. 112, Exhibit 38; Kahlenberg Report, p. 40 (on overrepresentation of New England students at Harvard).

[101] Kahlenberg Report, p. 50.

[102] Card Report, p. 193.

[103] Justin Berkman, "SAT Historical Percentiles for 2015, 2014, 2013, 2012, and 2011," PrepScholar, March 11, 2017. Professor Card's 4x socioeconomic preference also involves a small SAT drop, from the 99th to 98th percentile. See Card Report, p. 111, Exhibit 38.

[104] Card Report, p. 193

Card's heavy focus on minor changes in academic preparation is at odds with statements from Harvard administrators about the College's values. They are also at odds with Harvard's other expert witness, President Simmons, who notes that "highly selective institutions of higher education like Harvard rightly consider more than a student's academic achievement and academic potential in deciding whom to admit."[105] Harvard, she says, has "thousands of applicants with similarly strong academic qualifications."[106] Indeed, Card's objections are in tension with his *own* statements in his report. In the context of racial differences in entering grades and test scores, Card concludes that "Harvard's admissions process values many dimensions of excellence, not just prior academic achievement."[107]

Moreover, there is a particular reason to be less concerned with changes in academic preparation when admitting more students from economically disadvantaged backgrounds. As Justice William O. Douglas once recognized, "[a] black applicant who pulled himself out of the ghetto into a junior college may thereby demonstrative a level of motivation, perseverance, and ability that would lead a fairminded admissions committee to conclude that he shows more promise for law study than the son of a rich alumnus who achieved better grades at Harvard. That applicant would be offered admissions not because he is black, but because as an individual he has shown he has the potential, while the Harvard man may have taken less advantage of the vastly superior opportunities offered him."[108] Such an applicant "may not realize his full potential in the first year of law school or in the full three years, but in the long

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[105] Simmons Report, p. 14.

[106] Simmons Report, p. 15. See also Kahlenberg Report, pp. 50-51.

[107] Card Report, p. 6.

[108] DeFunis v. Odegaard, 416 U.S. 312, 331 (1974).

pull of a legal career, his achievements may far outstrip those of his classmates whose earlier records appeared superior by conventional criteria."[109]

Douglas's contention is supported by empirical research conducted at Harvard. Harvard Law Professor Lani Guinier has noted that a "Harvard study of graduates over three decades found that students with low Scholastic Aptitude Test scores and blue-collar backgrounds tended to be more successful, with success defined by income, community involvement and professional satisfaction. This suggests that a student's drive to succeed—along with an opportunity to do so—may be a better indicator of future success than test scores."[110]

3. Arcidiacono Simulation 4 and Card Simulation 4x are viable race-neutral alternatives despite their minimal effect on expected majors and athletes.

Card raises additional concerns about race-neutral alternatives: that they may produce more students whose expected major is in the biological sciences, or that they will result in the admission of fewer athletes.[111]

These are, however, relatively minor concerns. The intended major indicated by a 17-year-old applicant can change in college and almost always does. According to the National Center for Education Statistics, 80% of college students end up changing their major.[112] (It is my understanding that Harvard refused to disclose to Students for Fair Admissions any data regarding Harvard undergraduates' decisions about changing their majors.) Likewise, it is odd

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[109] DeFunis, 416 U.S. at 331.

[110] Lani Guinier, "The Real Bias in Higher Education," New York Times, June 24, 1997.

[111] Card Report, p. 110.

[112] National Center for Education Statistics, cited in Donna Rosato "A Surprising Way to Limit Student Debt: Most students today take more than four years to earn a bachelor's degree," Consumer Reports, November 17, 2016, https://www.consumerreports.org/student-debt/surprising-way-to-limit-student-debt/.

that Card complains about any decline in athletes when it was he who decided to depart from the parameters of the simulations Arcidiacono and I conducted, which retained athletic preferences.[113]

B.   A new simulation from Card's model (Simulation 6) demonstrates viable race-neutral alternatives.

As noted above, considerations of geography are a tried and true approach in higher education to obtaining diversity, so it is appropriate to model a place-based approach that admits top students from different regions, using metrics such as College Board Neighborhood Clusters. But even if one shares Card's concerns about such a system, additional alternatives are viable. For this rebuttal report, I asked Arcidiacono to conduct new simulations that follow Card's model of providing a preference for students in socioeconomically disadvantaged neighborhoods (as opposed to top students from various neighborhoods), as well as disadvantaged families. Below, I describe (1) several improvements to Card's simulations; (2) the results of the new simulations; and (3) how the inclusion of additional socioeconomic factors and better recruitment could produce even greater racial, ethnic, and socioeconomic diversity.

1.   My new model improves upon Card's simulations.

To improve upon Card's model, I asked Arcidiacono to make five changes to Card's analysis, using Card's 4x socioeconomic status boost. Note that although Arcidiacono criticizes multiple aspects of Card's approach, I based these simulations upon Card's models in order to (1) fairly compare the improved simulations to Card's prior ones; and (2) demonstrate that race-neutral alternatives are available to Harvard even under the conception of the admissions process that it is advancing in this litigation.

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[113] Card Report, p. 104.

First, in the conception of socioeconomic disadvantage, Arcidiacono adds to Card's four-part definition of socioeconomic disadvantage a fifth variable: attending a high school whose student body is, as a whole, socioeconomically disadvantaged.[114] Attending a disadvantaged high school constitutes an additional obstacle for students, so those who have overcome that hurdle deserve special consideration.[115] Moreover, leaving out low-socioeconomic status high school as a factor unfairly penalizes African-American and Hispanic students, on average, because they are more likely to attend high poverty schools than whites of the same income.[116]

Second, I asked Professor Arcidiacono to employ a more sophisticated definition of disadvantaged neighborhood (and high school) than one that relies solely on income levels. I asked him to provide equal weight to three factors—(a) parental income, (b) parental education, and (c) percentage of families speaking a language other than English at home—to create a single composite measure of neighborhood and high school socioeconomic status.

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[114] Card's four variables are: 1) first-generation college, 2) eligible for fee-waivers, 3) from disadvantaged neighborhoods, and 4) tagged by a Harvard admissions officer as "disadvantaged" (which could be because they are from disadvantaged families or disadvantaged neighborhoods).

[115] See, e.g., Richard D. Kahlenberg, All Together Now: Creating Middle-Class Schools through Public School Choice (Brookings Press, 2001).

[116] See, e.g., Emma García, "Poor black children are much more likely to attend high-poverty schools than poor white children," Economic Policy Institute, January 13, 2017, http://www.epi.org/publication/poor-black-children-are-much-more-likely-to-attend-high-poverty-schools-than-poor-white-children/ (81.1% of poor black children attend high poverty schools compared with 53.5% of poor white children.).

These factors are all associated with academic outcomes in the academic literature.[117] And these factors have been employed in other contexts to denote socioeconomic disadvantage.[118]

Third, I asked Arcidiacono to provide a preference to those in the least disadvantaged third of neighborhood Census tracts (and high schools) in the data set.[119] This is preferable to the measure that Card employs to provide a preference to those living in a neighborhood with a median income below $65,000.[120] The problem with Card's $65,000 threshold is that it includes middle-class as well as economically disadvantaged neighborhoods. (In 2016, the

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[117] *Income:* Stanford University's Sean Reardon has found that "the income achievement gap (defined here as the average achievement difference between a child from a family at the 90th percentile of the family income distribution and a child from a family at the 10th percentile) is now nearly twice as large as the black-white achievement gap." Sean F. Reardon, "The widening academic achievement gap between the rich and the poor: New evidence and possible explanations," in Greg Duncan & Richard Murnane (Eds.), Whither Opportunity? Rising Inequality and the Uncertain Life Chances of Low-Income Children (New York: Russell Sage Foundation Press, 2011), https://cepa.stanford.edu/content/widening-academic-achievement-gap-between-rich-and-poor-new-evidence-and-possible.

Parents Education: According to a 2011 Brookings Institution analysis, for example, looking at family income and maternal education and the relationship to child outcomes, "[t]he range in average math readiness outcomes between the lowest and highest education and income groups … is 1.3 standard deviations for education and 1.1 for household income." Julia Isaacs & Katherine Magnuson, "Income and Education as Predictors of Children's School Readiness," Brookings Institution, December 2011, p. 11, https://www.brookings.edu/wp-content/uploads/2016/06/1214_school_readiness_isaacs.pdf.

English Language Leaners (ELLs): ELL students have lower levels of academic achievement than native English speakers. Being able to read adequately by the end of 3rd grade and having adequate math skills by the end of 8th grade are seen as key predictors of future success. According to the National Assessment of Educational Progress in 2013, English Language Learners lag behind non-English Language Learners by about 40 percentage points on meeting "basic or above" levels in both cases. Across the U.S., 72% of non-ELL students score at or above basic in reading in 4th grade, compared with 31% of ELL students. In 8th grade math, 75% of non-ELL students score at or above basic compared with 31% of ELL students. David Murphey, "The Academic Achievement of English Language Learners: Data for the U.S. and Each of the States," Child Trends, December 2014, pp. 2-3, https://www.childtrends.org/wp-content/uploads/2015/07/2014-62AcademicAchievementEnglish.pdf.

[118] See Richard D. Kahlenberg, "School Integration in Practice: Lessons from Nine Districts" Century Foundation, October 14, 2016 (describing the use of Census tract data involving median family income, adult educational attainment, and percentage of population that is non-English speaking among other factors, by Chicago and Dallas school districts), https://tcf.org/content/report/school-integration-practice-lessons-nine-districts/.

[119] The definition of "neighborhood" in the simulation comes from the College Board and can be one or many Census tracts. The bottom third is calculated from the distribution of neighborhoods with at least one applicant to Harvard. Because neighborhoods were not uniquely identified, they were discerned from unique combinations of observable characteristics.

[120] Card Report, p. 106.

median household income was $57,617.)[121] By setting the neighborhood income threshold for disadvantage too high, Card's measure unfairly penalizes African-American and Hispanic students who, on average, live in more economically disadvantaged neighborhoods than whites of the same income.[122]

Fourth, I asked Arcidiacono to reinstate the athletic preference. For reasons outlined above, a realistic race-neutral alternative would not eliminate athletic preferences.[123]

Fifth, I asked Arcidiacono to turn off the preference for early admission, something Card failed to do in his simulation.[124]

The results of the new simulation (which is labeled Simulation 6), are presented below.[125] (For the full results, see Appendix A.)

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[121] Gloria G. Guzman, "Household Income: 2016," U.S. Census Bureau American Community Survey Briefs, September 2017, p. 1.

[122] See Kahlenberg Report, p. 38 (noting that while 6% of young whites live in neighborhoods with more than 20% poverty rates, 66% of African Americans live in such neighborhoods).

[123] Card eliminates athletic preference. Card Report, p. 104.

[124] For completeness, I include in the appendix the results of a version of Simulation 6 which includes the early admission preference turned back on. It is designated Simulation 7. The results are very similar to those in Simulation 6, though with a slightly smaller Hispanic and Other share.

[125] Simulations 1-5 were presented in Kahlenberg Report, Appendix C.

2.   Results of Simulation 6 demonstrate the viability of another race-neutral alternative.

Harvard – Class of 2019			
Status Quo Race-Based Admissions		Simulation 6 Race-Neutral Admissions	
White	40%	White	32%
African American	14%	African American	10%
Hispanic and Other	14%	Hispanic and Other	20%
Asian American	24%	Asian American	31%
Race Missing	8%	Race Missing	7%
First Generation College	7%	First Generation College	25%
SAT score (percentile)	2244 (99th)	SAT score (percentile)	2173 (98th)
HS GPA converted	77	HS GPA converted	77

A few observations are worth highlighting.

First, under Simulation 6, combined racial and ethnic diversity of underrepresented students actually *rises* from 28% under the status quo (14% African American and 14% Hispanic and Other) to 30% (10% African American and 20% Hispanic and Other). The Hispanic and Other share increases by 43%. As discussed elsewhere, the decline in African-American representation could be addressed with the use of better socioeconomic data (wealth and single parent family in particular).[126] Moreover, it is notable that the 10% African-

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[126] Kahlenberg Report, pp. 17-20, and 52. See also discussion infra.

American admitted shares under Simulation 6 is greater than Harvard's enrolled share throughout most of the affirmative action era.[127]

Second, socioeconomic diversity, which the courts and Harvard also value for promoting the educational benefits of diversity, increases dramatically under Simulation 6. The percentage of first generation college students, for example, more than triples (from 7% to 25%). Given Harvard's lopsided socioeconomic profile currently, the changes predicted by the simulation should significantly enhance the educational benefits of diversity.

Third, academic preparedness of students remains stellar under Simulation 6. The average composite SAT score (2173) is at the 98th percentile, just 1 percentile point different than under the current system employing racial preferences (2244 at the 99th percentile). Average converted high school GPA remains identical at 77. All in all, Simulation 6 would provide a viable path for Harvard to maintain academic excellence while promoting higher levels of overall racial/ethnic and socioeconomic diversity.

3. Through the inclusion of additional socioeconomic factors and better recruitment of low-income students, the simulation could produce even greater racial, ethnic, and socioeconomic diversity.

If I had been given access to additional socioeconomic information that Harvard did not make available or if Harvard had recruited more aggressively, I could have created a simulation with even higher levels of racial, ethnic, and socioeconomic diversity. Thus, it is likely that my Simulation 6 is *understating* Harvard's ability to employ a viable race-neutral alternative.

More accurate income data. Harvard has access to the precise family income of applicants, but I was limited to rough proxies, such as whether students were eligible for fee

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[127] Kahlenberg Report, p. 50

waivers or tagged by Harvard admissions officers as disadvantaged. Card did not deny that these factors can mask considerable income variations. Nor did he deny that given large income differences by race in the United States, the lack of precise income data blunted the potential racial dividend of class-based affirmative action.[128]

Wealth data. Harvard has data on the wealth (net worth) of applicants, to which I was denied access. Card did not deny that wealth differences by race are much greater than income differences in the United States, and that the use of wealth in admissions could therefore provide a larger racial dividend than other socioeconomic factors.[129]

Family Structure. Harvard also has data on whether or not applicants are from single parent households, but refused to produce this information. Family structure can be an important ingredient in a socioeconomic affirmative action program. Children growing up in single parent families have lower academic achievement and attainment than children growing up in two parent households, on average. This is partly true because children growing up in a single parent household have lower incomes on average than households with two parents. According to the U.S. Census Bureau, for example, families headed by single mothers are much more likely to live in poverty than families with two parents.[130] But single parent household data do not simply mimic income data, rendering the former data point superfluous. "Research has shown that FA children [children raised in father-absent homes] graduate from high school and attend college at a lower rate, perform worse on standardized tests, and are more likely to use drugs than children from FP [father-present] homes. ... Even

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[128] Kahlenberg Report, p. 52.

[129] Kahlenberg Report, pp. 17-20 and 52.

[130] U.S. Census Bureau, America's Families and Living Arrangements: 2016, Table C8, https://www.census.gov /data/tables/2016/demo/families/cps-2016.html.

when controlling for economic and racial differences of the family, children from two-parent households outperform children from one-parent households across a variety of measures."[131]

Considering family structure in a socioeconomic affirmative action program would disproportionately benefit African-American applicants. In 2015, 66% of black children and 42% of Hispanic children were raised in single parent households, compared with 25% of white children.[132]

Better Recruitment. Finally, Simulation 6 understates its racial and socioeconomic potential because it is limited to the existing pool of applicants even though there is good reason to believe that Harvard does a poor job of recruiting students from disadvantaged backgrounds.[133]

V.   Conclusion

The Fourteenth Amendment requires that institutions such as Harvard bear "the ultimate burden of demonstrating, before turning to racial classifications, that available, workable, race-neutral alternatives do not suffice."[134] In the years leading up to the current litigation, Harvard failed to take even elementary steps to make this showing. Harvard's experts, likewise, have failed to rebut the research and evidence suggesting that viable race-neutral strategies are available to it. Custom-made simulations using actual Harvard applicant data demonstrate at least four viable race-neutral pathways by which Harvard can maintain its

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[131] Mark S. Barajas, "Academic Achievement of Children in Single Parent Homes: A Critical Review," The Hilltop Review, Vol. 5, Issue 1, December 2011, pp. 13-14 (citations omitted), http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=1044&context=hilltopreview.

[132] Annie E. Casey Foundation, "Children in single-parent families by race," Kids Count Data Center (2018), http://datacenter.kidscount.org/data/tables/107-children-in-single-parent-families-by#detailed/1/any/false/573,869,36,868,867/10,11,9,12,1,185,13/432,431.

[133] Kahlenberg Report, pp. 39-40.

[134] Fisher, 133 S. Ct. at 2420.

strong academic reputation while doing an even better job than it does today of attaining the

educational benefits of racial, ethnic, and socioeconomic diversity.

Dated: January 29, 2018   s/ Richard D. Kahlenberg

                                                          Richard D. Kahlenberg

VI.   Appendix A

Results of Race Neutral Alternatives Using Adjusted Card Model - Class of 2019

	Status Quo (Numbers)	Status Quo (Percentages)	Simulation 6 (Numbers)	Simulation 6 (Percentages)	Simulation 7 (Numbers)	Simulation 7 (Percentages)
Total Admitted	1679	100%	1679	100%	1679	100%
White	676	40%	541	32%	561	33%
Black	234	14%	164	10%	160	10%
Hispanic	233	14%	330	20%	313	19%
Asian	402	24%	523	31%	521	31%
Race Missing	134	8%	121	7%	123	7%
Northeast	694	41%	615	37%	630	38%
Midwest	207	12%	164	10%	170	10%
South	379	23%	392	23%	391	23%
West	399	24%	509	30%	488	29%
Legacy	259	15%	61	4%	81	5%
Athlete	180	11%	144	9%	159	9%
Disadvantaged	297	18%	865	52%	815	49%
First Generation	120	7%	423	25%	400	24%
Financial Aid	1102	66%	1420	85%	1389	83%
Waiver	309	18%	888	53%	832	50%
Rural	59	4%	87	5%	82	5%
Avg. Comp. SAT	2244		2173		2180	
Avg. Comp. ACT	33		32		33	
Avg. Academic Index	228		225		225	
Avg. Converted GPA	77		77		77	

*Simulation 6 adjusts Card model (4x socioeconomic boost) as described in Section IV(B)(1).

**Simulation 7 identical to SImulation 6 but assumes early action preferences remain.