

No. 08-1402

In The
Supreme Court of the United States

—◆—
MARY BERGHUIS, WARDEN, PETITIONER,

v.

DIAPOLIS SMITH.
—◆—

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT
—◆—

**BRIEF FOR SOCIAL SCIENTISTS,
STATISTICIANS, AND LAW PROFESSORS,
JEFFREY FAGAN, ET AL., AS AMICI CURIAE
SUPPORTING RESPONDENT**
—◆—

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INTEREST OF *AMICI CURIAE*¹

Amici curiae are leading social scientists, statisticians, and law professors actively engaged in social scientific research focused on the criminal justice system. Included among *amici* are authors of authoritative books and articles on statistics and the application of statistics in social science. *Amici* have written and conducted studies on a broad range of topics concerning the criminal justice and jury systems. Many *amici* are members and leaders of associations in their fields, including the National Academy of Sciences, the National Science Foundation, and the American Society of Criminology.

Amici curiae submit this brief to evaluate the various proposed methods for measuring underrepresentation in juror pools and to provide information and analysis about the underlying statistical issues presented in this case. *Amici* suggest adoption of the comparative disparity method because it provides a quantitative measure of the degree or extent of underrepresentation that is both scientifically valid

¹ Letters from the parties consenting to the filing of this brief are being filed with the Clerk of the Court, pursuant to Rule 37.3(a). No counsel for a party authored this brief in whole or in part, and no party or counsel for a party made a monetary contribution intended to fund the preparation or submission of the brief. No person other than *amici curiae* or their counsel made a monetary contribution to the preparation or submission of this brief.

and consistent with the constitutional principle of cross-sectionality.

In this case, the Michigan Supreme Court endorsed the use of multiple methods—including absolute disparity, comparative disparity, and statistical significance—to measure the underrepresentation of African Americans in the Kent County Circuit Court jury pool. While *amici* agree with the Michigan Supreme Court and the Sixth Circuit that comparative disparity is a proper method for measuring the degree of underrepresentation in the jury pool, *amici* believe that absolute disparity is an inappropriate and misleading measure of underrepresentation.

Of particular concern to *amici* is the standard suggested by Petitioner, and accepted by some courts, as the proper and exclusive method for evaluating Sixth Amendment fair-cross-section claims: a blanket rule that no underrepresentation can be challenged unless it presents an absolute disparity of greater than 10 percent between the composition of the population and the jury pool. *Amici curiae* oppose this proposed new rule on statistical and constitutional grounds, and present here demographic data showing that adoption of the greater than 10 percent absolute disparity standard would deny the fair-cross-section guarantee to the vast majority of Americans and in the vast majority of American courts, and would seriously undermine the integrity and legitimacy of our judicial system.

INTRODUCTION AND SUMMARY OF ARGUMENT

This Court has never designated a particular statistical method to evaluate underrepresentation in the jury pool. The Court has relied on three different statistical methods in equal protection challenges to the composition of a jury pool and in cases seeking to vindicate the Sixth Amendment's guarantee of a jury drawn from a fair cross section of the community. Each of these methods has its virtues and limitations.

The absolute disparity method subtracts a group's percentage of the jury pool from its percentage of the population. While simple to use, it is not a good measure of the degree of underrepresentation because it does not take account of the group's size. For example, if in one court a group is 70 percent of the population and 60 percent of the jury pool, and in another court a group is 12 percent of the population and 2 percent of the jury pool, both courts would see the same absolute disparity—10 percent. But these examples of underrepresentation are statistically and constitutionally very different. In the latter court, the group, though a sizable minority, is almost completely excluded, while the former group, and the representativeness of the jury pool, is far less affected. Absolute disparity produces identical results in vastly different circumstances. It both overstates insignificant disparities of large groups and understates significant disparities of small groups—even those resulting in complete exclusion.

Reliance on absolute disparity alone is therefore troubling enough. But Petitioner's embrace of a threshold of 10 percent absolute disparity as a constitutional standard is particularly unwise given the country's demographic composition (set out in detail, *infra*). Underrepresentation of a group that is 10 percent or less of the population cannot exceed a 10 percent absolute disparity, even if the group were entirely excluded from a jury system. And in the overwhelming majority of U.S. counties, African Americans, Hispanics, Asian Americans, and other minority groups each make up 10 percent or less of the population, although they are often more than 5 percent individually, and together often account for as much as a quarter or more of the population. Consequently, far from being a reasonable bright-line rule to discern systematic underrepresentation from mere happenstance, adoption of a 10-percent standard would deprive the vast majority of this country of the right to jury pools in which African Americans, Hispanics, Asian Americans, and other smaller minority groups are fairly represented. It would, for all practical purposes, eliminate the Sixth Amendment fair-cross-section guarantee.

Some courts have used a statistical significance test as an alternative to absolute disparity, calculating the probability that the disparity between the population and the jury pool would occur by chance if the jury pool were randomly drawn from the population. If the probability is low—generally, meaning 5 percent or less—the court can conclude

that the jury pool was not randomly drawn from the population. The primary limitation of this method is that it fails to answer the constitutional question: when is underrepresentation in the jury pool so unfair and unreasonable as to be unconstitutional? Because statistical significance tests do not report the *degree* of underrepresentation, they do not answer that question. Most statistical significance tests also suffer from extreme sensitivity to the size of the jury pool. When sample sizes are large, even small disparities may be statistically significant, and lead to a rejection of the fairness of the jury pool. The statistical significance test, applied to common sizes of jury pools, results in too broad an invalidation of jury systems.

The third alternative—the one *amici* urge the Court to adopt—is the comparative disparity standard. Comparative disparity measures underrepresentation by the proportion of the group missing from the jury pool. If, for example, a group is 30 percent of the jury-eligible population but only 20 percent of the pool, that group is underrepresented by a 33.3 percent comparative disparity (the absolute disparity divided by the proportion of the group in the community). By measuring the degree by which a group is underrepresented on a jury pool, comparative disparity is the only method that can guide a court's determination of the point at which underrepresentation becomes unconstitutional. Comparative disparity avoids absolute disparity's central flaw—its inability to accurately reflect the degree of

underrepresentation of various sizes of distinct groups.

As some courts have recognized, for very small minority populations, comparative disparity can exaggerate the extent of underrepresentation. Unlike absolute disparity, however, that limitation of comparative disparity can be easily addressed, by requiring a higher threshold of underrepresentation when the group is small.

Amici therefore suggest a two-tiered approach, under which comparative disparities of greater than 15 percent satisfy the underrepresentation prong of *Duren v. Missouri*, 439 U.S. 357 (1979), unless the distinct group is less than 10 percent of the jury-eligible population, in which case a comparative disparity of greater than 25 percent should be required.

ARGUMENT

THE COMPARATIVE DISPARITY METHOD BEST VINDICATES THE PRINCIPLES EMBODIED IN THE SIXTH AMENDMENT'S FAIR-CROSS-SECTION GUARANTEE

A. The Sixth Amendment Guarantees That Representation Of Distinct Groups In The Jury Pool Be Fair And Reasonable In Relation To Their Presence In The Community

1. The Sixth Amendment guarantees “the right to a speedy and public trial, by an impartial jury of

the state and district wherein the crime shall have been committed.” In *Taylor v. Louisiana*, 419 U.S. 522, 530 (1975), this Court construed that constitutional guarantee to include the right to a jury drawn from a fair cross section of the community. This right is critical to the democratic function of the jury: “to guard against the exercise of arbitrary power—to make available the commonsense judgment of the community as a hedge against the overzealous or mistaken prosecutor and in preference to the professional or perhaps overconditioned or biased response of a judge.” *Id.* at 530. To achieve this ideal, *Taylor* concluded that “jury wheels, pools of names, panels, or venires from which juries are drawn must not systematically exclude distinctive groups in the community and thereby fail to be reasonably representative thereof.” *Id.* at 538; see also *Holland v. Illinois*, 493 U.S. 474, 480-81 (1990) (noting that the fair-cross-section requirement is a means of achieving impartiality).

Four years after *Taylor*, in *Duren v. Missouri*, 439 U.S. 357 (1979), the Court outlined the elements of a *prima facie* violation of the Sixth Amendment right to a fair cross section of the community: (a) the group alleged to be excluded is a distinct group (cognizable group prong); (b) the representation of the group in the jury pool is not fair and reasonable in relation to the number of such persons in the community (underrepresentation prong); and (c) the underrepresentation is due to systematic exclusion of the group in the jury-selection process (systematic prong).

Id. at 364. If a defendant demonstrates a *prima facie* violation, the government must justify its jury-selection practices by establishing “that a significant state interest [is] manifestly and primarily advanced by those aspects of the jury-selection process . . . that result in the disproportionate exclusion of a distinctive group.” *Id.* at 367-68.

Duren is the latest in a long line of decisions that consistently emphasize the unique constitutional significance of jury representativeness. It presents a common form of discrimination: a group is underrepresented in a government institution. But in addition, jury unrepresentativeness undermines the rights of litigants to a fair trial and the integrity and legitimacy of our courts.² See *Taylor*, 419 U.S. at 530, 532 n.12.

2. The underrepresentation prong has garnered the most attention from courts and commentators.

² A *prima facie* equal protection claim can be established in the jury context by demonstrating substantial underrepresentation in combination with a clear opportunity to discriminate. See, e.g., *Alexander v. Louisiana*, 405 U.S. 625, 630 (1972) (finding *prima facie* equal protection violation established through proof of substantial underrepresentation and “clear and easy opportunity for racial discrimination”); *Castaneda v. Partida*, 430 U.S. 482, 494 (1977) (“[T]o show that an equal protection violation has occurred in the context of grand jury selection, the defendant must show that the procedure employed resulted in substantial underrepresentation of his race or of the identifiable group to which he belongs.”); *Turner v. Fouche*, 396 U.S. 346, 360 (1970).

Lower federal and state courts have adopted a range of statistical methods to distinguish tolerable from unconstitutional disparities, including, most prominently, the comparative and absolute disparity standards.

This Court has never required a single or exclusive method for evaluating a fair-cross-section claim. Each time the Court has considered the fair-cross-section guarantee, the magnitude of the disparity was so extreme that it was manifest under any of the accepted metrics. *See Taylor*, 419 U.S. at 524 (women were no more than 10 percent of the jury wheel despite being 53 percent of the adult community); *Duren*, 439 U.S. at 362-63 (women were 14.5 percent of the post-summons weekly venires during a 8-month period and 15.5 percent in the month of the trial despite being 54 percent of the adult community).

This Court has used multiple methodologies—including absolute and comparative disparity, as well as statistical significance—to evaluate underrepresentation claims. In *Castaneda v. Partida*, 430 U.S. at 495-96 & n.17, the Court relied upon statistical significance to find that the disparity between the proportion of Mexican Americans in the population and those summoned for the grand jury was the result of intentional discrimination. In *Alexander*, 405 U.S. at 629, the Court considered both comparative disparity and statistical significance to

find that a *prima facie* equal protection violation had been established.³

In short, this Court has never insisted upon the absolute disparity method for evaluating underrepresentation. And contrary to Petitioner’s proposed blanket rule—which forecloses any challenge unless a group is underrepresented by an absolute disparity of more than 10 percent—the only decision of this Court mentioning the possibility, *Swain v. Alabama*, 380 U.S. 202 (1965), has been noticeably absent from the Court’s decisions on the substantiality of jury underrepresentation for the succeeding 45 years. *Swain* has not been followed or even cited by this Court on this issue in *Duren*, *Taylor*, or any of its equal protection or Sixth Amendment decisions, even where the proposed 10 percent absolute disparity rule would have been determinative.⁴

³ *Alexander* did not refer to the comparative disparity method by name, but the Court’s approach makes clear that it used that method: “21% of the population was Negro [but the] pool of possible grand jurors . . . was 14% Negro, a reduction by one-third of possible black grand jurors. The commissioners then twice culled this group to create a list of 400 prospective jurors, 7% of whom were Negro—a further reduction by one-half.” 405 U.S. at 629. The Court also considered statistical significance: “under one statistical technique of calculating probability, the chances that 27 Negroes would have been selected at random for the 400-member final jury list, when 1,015 out of the 7,374 questionnaires returned were from Negroes, are one in 20,000.” *Id.* at 630 n.9.

⁴ In *Vasquez v. Hillery*, 474 U.S. 254, 268 n.2 (1986), neither *Swain* nor the 10 percent rule is mentioned by the majority or
(Continued on following page)

The Court has made clear, however, the goal to which any of these statistical methods must be applied. The appropriate method must distinguish tolerable from unconstitutional disparities between a distinct group's population in the community and its representation on a jury pool. As *Duren* put it, the question is whether a group's representation on a jury pool is "fair and reasonable" in relation to the group's population in the community. Any statistical method employed in a case construing the Sixth Amendment's fair-cross-section guarantee must answer that fundamental question.

dissent, although the Court invalidated an underrepresentation that presented an absolute disparity less than 10 percent. This Court did not cite to *Swain's* 10 percent rule in any of its subsequent underrepresentation cases. See, e.g., *Whitus v. Georgia*, 385 U.S. 545 (1967); *Turner, supra*; *Alexander, supra*; *Duren, supra*; *Taylor, supra*; *Castaneda, supra*.

While this Court partly overruled *Swain* in *Batson v. Kentucky*, 476 U.S. 79 (1986), and has otherwise disregarded it, the Fifth, Seventh, Eighth, and Eleventh Circuits have all applied *Swain's* 10 percent rule to fair-cross-section cases. See *United States v. Maskeny*, 609 F.2d 183, 190 (5th Cir. 1980); *United States v. McAnderson*, 914 F.2d 934, 941 (7th Cir. 1990); *United States v. Clifford*, 640 F.2d 150, 155 (8th Cir. 1981); *United States v. Tuttle*, 729 F.2d 1325, 1327 (11th Cir. 1984).

B. The Absolute Disparity Standard Fails To Accurately Measure Substantial Underrepresentation, Much Less Properly Vindicate The Constitutional Interests At Stake

1. Absolute Disparity Fails to Measure the Degree of Underrepresentation in a Jury Pool

The absolute disparity measure—the arithmetic difference between a group’s proportion of the population and its proportion of the jury pool—fails to address the fundamental question posed by the underrepresentation prong: whether the group’s representation in a jury pool is fair and reasonable in relation to its presence in the community. By not accounting for the size of an underrepresented group, absolute disparity fails to distinguish relatively inconsequential underrepresentation from complete exclusion. To demonstrate the point, we include here a table showing potential underrepresentation claims by groups of various sizes.

Table 1. Comparison of Various Standards of Jury Representativeness⁵
 (Shaded where values exceed suggested underrepresentation limits)

Group's Representation in Population and Jury Pool	Jury Pool Proportion (%)	Absolute Disparity (%)	Comparative Disparity (%)	Underrepresentation as Calculated by the Various Standards of Representativeness			
				Statistical Significance (expressed as probability) for Various Jury Pool Sizes:			
			500	1,000	10,000	50,000	
70	60	10.0	14.2	Less than 1 out of a million	Less than 1 out of a trillion	Less than 1 out of a trillion trillion	Less than 1 out of a trillion trillion
30	20	10.0	33.3	Less than 1 out of 100,000	Less than 1 out of a billion	Less than 1 out of a trillion trillion	Less than 1 out of a trillion trillion
30	27	3.0	10.0	13.7%	4.7%	Less than 1 out of a trillion	Less than 1 out of a trillion trillion
15	5	10.0	66.7	Less than 1 out of 100 billion	Less than 1 out of a trillion	Less than 1 out of a trillion trillion	Less than 1 out of a trillion trillion
12	2	10.0	83.3	Less than 1 out of a trillion	Less than 1 out of a trillion trillion	Less than 1 out of a trillion trillion	Less than 1 out of a trillion trillion
7.28	4.75	2.5	34.8	3.72%	Less than 4 out of a thousand	Less than 1 out of a billion trillion	Less than 1 out of a trillion trillion

⁵ This table compares the results of underrepresentation calculations by the three common standards of representativeness for six different combinations of a group's proportion of the population and the jury pool. The results are presented with a shaded background if they exceed allowable underrepresentation limits as the various standards have been commonly used or proposed: an absolute disparity over 10%; a comparative disparity over 15% or, for minorities less than 10% of the population, over 25%; a statistical significance test can only be calculated using the normal approximation to the binomial distribution according to the central limit theorem. The statistical significance test can only be calculated with an additional variable, the size of, or number of people in, the qualified jury pool, so its results are presented for four different jury pool sizes that are common for various jury systems. The probabilities for the statistical significance results are expressed either as a percentage (e.g., 5%, which as a decimal is .05) or as "Less than 1 out of a trillion" (which in scientific notation is usually expressed as 1×10^{12}); they can also be expressed in terms of "standard deviations," 1.64 of which (for a "one-sided" significance test; for a "two-sided" test, it would be 1.96, or about 2) usually corresponds to a probability of 5%. The table does not present any specific probabilities lower than "1 out of a trillion trillion," which is 1 out of 1,000,000,000,000,000,000,000,000,000, or in scientific terms, 1×10^{24} ; lower probabilities are included in "Less than 1 out of a trillion trillion."

Table 1 shows how absolute disparity remains constant even when measuring statistically and constitutionally dissimilar underrepresentation. The very large group represented in the first row of Table 1 composes 70 percent of the population, but is only 60 percent of the jury pool. Accordingly, this group is underrepresented by a 10 percent absolute disparity ($70\% - 60\% = 10\%$). The medium-sized group that is 30 percent of the population, but only 20 percent of the jury pool (second row), also has a 10 percent absolute disparity, as does the group that is 12 percent of the community, but only 2 percent of the jury pool (fifth row).

But absolute disparity conceals significant differences among these examples—differences that matter both statistically and constitutionally. The 70 percent-to-60 percent group is 14 percent less likely to be represented in the jury pool as a result of the underrepresentation, while the 30 percent-to-20 percent group is 33 percent less likely to be represented in the jury pool. The most severe underrepresentation occurs to the 12 percent-to-2 percent group, which is 83 percent less likely to be represented on the jury pool—almost total exclusion. Despite these widely varying circumstances, the absolute disparity remains constant in all three examples, yielding identical results in palpably different situations.

Absolute disparity thereby distorts the evaluation of underrepresentation. When distinct groups are small, absolute disparity legitimates complete

exclusion, because absolute disparity can never exceed a group's overall proportion of the population (i.e., a distinct group composing 8 percent of the population can never have an absolute disparity greater than 8 percent). Even for medium-sized minority groups, at 12 percent or 15 percent of the community, a 10 percent absolute disparity allows near total exclusion. At the same time, absolute disparity invalidates moderate underrepresentation of very large groups. If the underrepresentation of the 70 percent group goes over 10 percent, say to 10.1 percent, it would be invalidated under a greater-than-10 percent rule. This large group is less affected by such underrepresentation.

This critique of the absolute disparity method finds widespread support in legal commentary.⁶ Commentators have documented the manner in

⁶ See, e.g., Sara Sun Beale, *Integrating Statistical Evidence and Legal Theory to Challenge the Selection of Grand and Petit Jurors*, 46 *Law & Contemp. Probs.* 269, 273 (1983); John P. Bueker, *Note: Jury Source Lists: Does Supplementation Really Work?*, 82 *Cornell L. Rev.* 390 (1997); David Kairys, Joseph Kadane & John Lehoczky, *Jury Representativeness: A Mandate for Multiple Source Lists*, 65 *Cal. L. Rev.* 776, 793 (1977); Richard M. Re, *Note: Justifying The Fair Cross Section Requirement: Equal Representation and Enfranchisement in the American Criminal Jury*, 116 *Yale L.J.* 1568, 1614 (2007); Peter W. Sperlich & Martin J. Japovice, *Methods for Analysis of Jury Panel Selections: Testing for Discrimination in a Series of Panels*, 6 *Hastings Con. L.Q.* 787, 794 (1979); Cynthia A. Williams, *Note: Jury Source Representativeness and the Use of Voter Registration Lists*, 65 *N.Y.U. L. Rev.* 590, 611-12 (1990).

which absolute disparity “can produce seemingly low levels of disparity in situations where common sense and statistical analysis indicate significant underrepresentation.” Richard Seltzer et al., *Fair Cross-Section Challenges in Maryland: An Analysis and Proposal*, 25 U. Balt. L. Rev. 127, 135 (1996) (recommending the use of comparative disparity). Moreover, “[i]f the distinctive group is a minority group with a small population in the geographic region, a 10% absolute disparity measure will allow the exclusion of most or all of the group without protest from the courts.” Williams, *supra*, Note: *Jury Source Representativeness and the Use of Voter Registration Lists*, 65 N.Y.U. L. Rev. at 612 (recommending the use of comparative disparity); see also Bueker, *supra*, Note: *Jury Source Lists: Does Supplementation Really Work?*, 82 Cornell L. Rev. 390.

These criticisms have not been lost on courts, including those that have been constrained by their Circuit’s precedent to use the absolute disparity measure. The Second Circuit, for example, has noted absolute disparity’s central flaw (while nonetheless adhering to it). *United States v. Biaggi*, 909 F.2d 662, 678 (2d Cir. 1990) (noting that absolute disparity risks “tolerat[ing] a selection system in which the seemingly innocuous absence of small numbers of a minority from an average array creates an unacceptable probability that the minority members of the jury ultimately selected will be markedly deficient in number and sometimes totally missing”);

see also *Alston v. Manson*, 791 F.2d 255, 259 (2d Cir. 1986) (“[T]he absolute disparity approach . . . may be outmoded and should be discarded. In light of our fourteenth amendment analysis, however, we need not reach this question.”); *United States v. Jackman*, 46 F.3d 1240, 1247 (2d Cir. 1995) (“[I]n *Biaggi* we recognized that the absolute numbers approach is of questionable validity when applied to an under-represented group that is a small percentage of the total population.”).

The Fifth, Eighth, Ninth, Tenth, and Eleventh Circuits have all echoed these concerns. See, e.g., *Mosley v. Dretke*, 370 F.3d 467, 479 n.5 (5th Cir. 2004) (“We leave open the possibility that if the distinctive group at issue makes up less than 10% of the population, comparative disparity may be used.”);⁷ *United States v. Rogers*, 73 F.3d 774, 776-77 (8th Cir. 1996) (“Although utilizing the absolute disparity calculation may seem intuitive, its result understates the systematic representative deficiencies; the percentage disparity can never exceed the percentage of [the distinct group] in the community.”); *Hirst v. Gertzen*, 676 F.2d 1252, 1258 n.14 (9th Cir. 1982) (“Where the cognizable group involved in the jury

⁷ See also *Foster v. Sparks*, 506 F.2d 805, 835 (5th Cir. 1975) (suggesting that “an intractable use of the absolute measure may, in certain circumstances also produce distorted results. . . . Hence, flexible use of the two measures is advisable, with the selection of either to be guided by both a desire to avoid distorted results and a need to adequately protect the interests of those challenging the selection system.”).

challenge represents a small percentage of the population, [comparative disparity] is the more informative. Since the group in question makes up a relatively small percentage of the population, the ‘absolute’ disparity between the percentage of the group in the population and the percentage on the jury venire will always be small, even where the group has essentially been eliminated during the selection process.”); *United States v. Rodriguez-Lara*, 421 F.3d 932, 944 n.10 (9th Cir. 2005) (“The comparative disparity method can distort the effect of disparities in representation when absolute numbers are low. . . . However, absolute disparity is also problematic. For example, our circuit has tolerated absolute disparities in distinctive group representation of up to 7.7%. . . . The necessary implication of this margin is that if a distinctive group makes up 7.7% or less of the community, then the fair-cross-section requirement offers no redress even if that group is *entirely shut out of the jury pool*. . . . While Ninth Circuit precedent requires us to evaluate representativeness using absolute disparity statistics alone, that approach is not without short-comings.”) (internal citations omitted); *United States v. Shinault*, 147 F.3d 1266, 1273 (10th Cir. 1998) (“Indeed, small absolute disparity figures are less persuasive in a case such as this, where, because of the minorities’ small population, even the complete exclusion of the groups would result in absolute disparities of less than 6%.”); *United States v. Rodriguez*, 776 F.2d 1509, 1511 n.4 (11th Cir. 1985) (suggesting that a method other than absolute

disparity may be necessary when the minority group does not exceed 10 percent of the population).

Thus, there is broad recognition that absolute disparity is an inadequate indicator of whether a distinct group is substantially underrepresented in the jury pool. By failing to differentiate the effects of underrepresentation on small, medium, and large distinct groups, absolute disparity legitimates complete exclusion of small distinct groups, even as it invalidates minor underrepresentation in large distinct groups.

2. Petitioner's Proposed Rule, Requiring More Than 10 Percent Absolute Disparity to Challenge Any Jury System, Would Effectively Eliminate the Fair-Cross-Section Guarantee

Since no group can have an absolute disparity greater than its presence in the community, setting the requisite threshold for a constitutional violation of the fair-cross-section guarantee at greater than 10 percent would have a pernicious effect: any group that is 10 percent or less of the jury-eligible population could be completely excluded. The 10-percent standard would tolerate even greater multiple disparities in communities where multiple ethnic and racial minority groups each have a substantial presence—an increasingly prevalent reality as the American demography continues to diversify. In these communities, it is possible that no single minority population group may rise to the

greater-than-10 percent absolute disparity threshold, but the majority population could well be over-represented relative to their share of the population.

The asymmetry of the absolute disparity model (i.e., its over-sensitivity to disparities of larger distinct groups and under-sensitivity to disparities of small distinct groups) would, in effect, skew jury pools away from ethnic and racial diversity and towards homogeneity. Such a result would undermine the fair-cross-section right as a tool to ensure democratic participation in the jury trial system and the legitimacy and integrity of the courts.

Amici have assessed the national impact of allowance of underrepresentation that does not exceed 10 percent absolute disparity. Based on current U.S. demographics, such a rule would enable the right to a jury chosen from a cross section of the community—a right that belongs to all defendants, of any race or ethnicity, *see, e.g., Taylor, supra*—to be denied to the vast majority of individuals and in the vast majority of American courts. All-white juries and near all-white juries could become common, with no remedy in the Constitution or in the courts that enforce it.

The proportions modeled in Table 1 closely track the racial and ethnic makeup of the U.S. jury-eligible population. According to the 2000 Census, non-Hispanic whites make up approximately 70 percent of the jury-eligible population, while African Americans

and Hispanics each compose slightly less than 12 percent.⁸

As illustrated in Table 2, *infra*, based on *amici's* demographic computations, Petitioner's proposed 10 percent rule would bar fair-cross-section claims alleging underrepresentation of African Americans in over three quarters of U.S. counties, which are home to almost 60 percent of Americans. Fair-cross-section claims brought to ensure Hispanic participation would be unavailable in 92 percent of U.S. counties for over three quarters of Americans. Asian Americans fare even worse, and the guarantee effectively would no longer exist with respect to Native Americans and Hawaiian/Pacific Islanders.

⁸ According to the 2000 Census, non-Hispanic whites are 70.2 percent of the U.S. population ages 18-69, and African Americans and Hispanics are each 11.9 percent of the 18-69 population. Asians are 3.9 percent of the U.S. population, *available at* http://factfinder.census.gov/servlet/DTTable?_bm=y&s_name=DEC_2000_SF1_U&CONTEXT=dt&mt_name=DEC_2000_SF1_U_P005&mt_name=DEC_2000_SF1_U_P012A&-mt_name=DEC_2000_SF1_U_P012B&-mt_name=DEC_2000_SF1_U_P012D&mt_name=DEC_2000_SF1_U_P012H&-mt_name=DEC_2000_SF1_U_P003&-redoLog=true&-currentselections=DEC_2000_SF1_U_P012A&-geo_id=01000US&-format=&-_lang=en (last visited December 13, 2009).

Table 2. U.S. Counties with Distinctive Racial/Ethnic Group of 10% or Less⁹

<i>Distinctive Ethnic or Racial Group</i>	<i>Counties with 10% or less</i>	<i>Percent of U.S. Counties with 10% or less</i>	<i>Total Population of Counties with 10% or less</i>	<i>Percent of U.S. Population in These Counties</i>
Non-Hispanic Whites	2	< .1%	19,494	< .1%
African Americans	2351	75.4%	164,930,443	58.6%
Hispanics	2869	92%	214,745,554	76.3%
Asian Americans	3086	98.9%	245,632,050	87.3%
Native Americans	3029	97.2%	278,745,987	99.0%
Hawaiians/Pacific Islanders	3092	99.1%	280,012,701	99.5%

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⁹ Population figures are based on the 2000 U.S. Census except that the 2006 American Community Survey (“ACS”), part of the Decennial Census Program, was used to calculate racial and ethnic proportions of counties with populations over 65,000. See <http://www.census.gov/acs/www/Downloads/Handbook2006.pdf>. Excluded from the list of 3118 U.S. counties and county equivalents are the 22 smallest independent cities in Virginia for which race and ethnic statistics were not obtained. The Hispanic population is limited to U.S. citizens who are proficient in the English language.

The 10 percent absolute disparity rule would permit an even greater degree of deviation from a fair cross section in multi-ethnic communities where no single minority group exceeds 10 percent. Indeed, in a jury pool that mirrors the national makeup (African Americans and Hispanics at 12 percent each, Asian Americans at 4 percent, and non-Hispanic whites at 70 percent), an almost total exclusion of Hispanics and African Americans and the complete exclusion of Asian Americans would not violate the fair-cross-section guarantee, despite the fact that such exclusion could lead to an underrepresentation of almost a third of the jury-eligible population and a substantial overrepresentation of non-Hispanic whites.

Counties with such diverse population patterns are not hypothetical; increasingly, they can be found throughout the country:

- Clark County, Nevada—which includes Las Vegas, and is home to nearly 1.4 million residents—is composed of 9.6 percent African Americans, 9.7 percent Hispanics, and 7.0 percent Asian Americans.¹⁰
- Richmond County, New York—which encompasses the borough of Staten

¹⁰ Population figures are based on the 2000 Census and the 2006 ACS. *See* note 9, *supra*.

Island, New York City, and is home to over 440,000 residents—is composed of 10 percent African Americans, 9.2 percent Hispanics, and 7.4 percent Asian Americans.

- Dupage County, Illinois—which is outside of Chicago, and is home to over 900,000 residents—is composed of 4.3 percent African Americans, 6.3 percent Hispanics, and 9.8 percent Asian Americans.
- Ramsey County, Minnesota—which encompasses St. Paul, and is home to over 500,000 residents—is composed of 9.8 percent African Americans, 2.6 percent Hispanics, and 9 percent Asian Americans.
- Collin County, Texas—a suburb of Dallas, Texas, with a population of over 490,000 residents—is composed of 7.3 percent African Americans, 10 percent Asian Americans, and 5.5 percent Hispanics.
- Multnomah County, Oregon—which includes Portland, and is home to over 660,000 residents—is composed of 5.8 percent African Americans, 6.2 percent Asian Americans, and 3.2 percent Hispanics.
- Pinellas County, Florida—which includes St. Petersburg, and Clearwater, and is home to over 920,000 residents—is

composed of 9.7 percent African Americans, 2.8 percent Hispanics, and 3.1 percent Asian Americans.

No reasonable person would consider an all-white jury pool to be a fair and reasonable cross section of these communities. Yet adoption of the 10-percent standard would permit such a reality, completely unchecked by the Sixth Amendment's fair-cross-section guarantee.

C. Statistical Significance Does Not Answer The Right Question, Provides Confusing And Misleading Results, And Would Invalidate Minor Underrepresentation

Statistical significance tests¹¹ are widely used in social science, business, and law. *See generally* Michael O. Finkelstein & Bruce Levin, *Statistics for Lawyers* (2d ed. 2001); *Statistical Science in the Courtroom* (Joseph L. Gastwirth 3d ed. 2000) (providing examples of statistical analysis in employment discrimination cases, criminal sentencing, and forensic DNA profiling). But in statistics

¹¹ Statistical significance tests are applied to the distribution of a measure and suggest whether the observed outcome happened by chance, or if it occurred systematically. Statistical significance tests can be applied to different types of distributions, such as a normal distribution (or, in common terms, a bell-shaped curve), or other distributions such as a Poisson, binomial, or chi-squared, where the data typically follow other patterns.

there is not one analysis or principle that fits all situations or applications, any more than there is in law. *See generally Statistics for Lawyers*. Despite its virtues in other applications, the statistical significance test is less useful and of questionable validity in jury composition cases.¹²

The statistical significance test purports to assess underrepresentation by calculating the probability of an observed disparity¹³ occurring if the jury pool were drawn randomly from the population. *See*

¹² Justice Cavanaugh's concurrence, in the Michigan Supreme Court case below, concluded that underrepresentation of African Americans in the Kent County Circuit Court jury pool was statistically insignificant. The court's computation, however, incorporated glaring mathematical errors that substantially affect the results. Appendix ("A") 164a.

The court used a proper arithmetic calculation to determine the standard deviation, but used the wrong data. A 164a. The African American proportion of the Kent County adult population is 7.28 percent or .0728 (and not, as the court calculated, .728) and the non-African American jury-eligible residents should be .9272 and not, as the court calculated, .972 (1—proportion of jury-eligible African Americans). Properly calculated, the standard deviation, rounded to the nearest whole number, is 8. As a result, the difference between the number of African Americans in a fully representational pool, 68, and their actual representation, 55, is just under two standard deviations. This should be compared to the widely accepted threshold of 1.64 standard deviations for statistical significance at the .05 or 5 percent level in a "one-sided" test. The difference therefore was statistically significant.

¹³ The probability is actually of an observed or greater disparity occurring; we have omitted "or greater" throughout this brief to avoid confusion.

Michael O. Finkelstein, *The Application of Statistical Decision Theory to the Jury Discrimination Cases*, 80 Harv. L. Rev. 338, 353-56 (1966). If that probability is very low, one concludes that the jury pool was not randomly drawn from the population.¹⁴ The cutoff most often used as the measure of statistical significance is a probability below 5 percent. David H. Kaye & David A. Freedman, *Reference Guide on Statistics*, in *Reference Manual on Scientific Evidence* 83, 124 (Federal Judicial Center 2d ed. 2000).¹⁵

Use of a statistical significance test for jury composition cases presents two distinct but related problems. First, a statistical significance test does not answer the question the Constitution asks. It does not assess the degree of underrepresentation,

¹⁴ More precisely, the conclusion is that either something very unusual occurred or the jury pool was not randomly drawn from the population, and the statistical analysis does not tell us which it is.

¹⁵ The results of a binomial test of statistical significance test can be expressed as a probability. It is also common to express statistical significance in terms of standard deviations. When a result is greater than 1.96 standard deviations (for a “two-sided” test), in a normal distribution or in large samples, it is typically regarded as statistically significant at probability (“*p*”) < .05. In *Castaneda*, 430 U.S. at 496 n.17 and *Hazelwood School Dist. v. United States*, 433 U.S. 299, 309 n.4 (1977), this Court described the null hypothesis as “suspect to a social scientist” when statistics from a “large sample” fall more than “two or three standard deviations” from its suspected value under the null hypothesis. These differences produce *p*-values of about 5 percent and 1 percent respectively. See *Reference Guide on Statistics, supra*, at 124 n.138.

nor does it provide a quantitative measure that distinguishes tolerable from unconstitutional underrepresentation. It tells us only what we already know—that the jury pool was not randomly drawn from the population—without providing a measure of the magnitude of any deviation from the cross-sectional norm. *See, e.g., United States v. Rioux*, 97 F.3d 648, 655 (2d Cir. 1996) (“It is illogical to apply a theory based on random selection when assessing the constitutionality of a qualified wheel. By definition, the qualified wheel is not the product of random selection; it entails reasoned disqualifications based on numerous factors.”).

Since statistical significance measures the improbability of randomly drawing a jury pool with the observed underrepresentation from the population, its results are highly dependent on the size of the jury pool: the larger the jury pool, the less likely it is to be unrepresentative of the population if it were randomly drawn from that population. *Statistics for Lawyers* at 21-22.

This sensitivity to sample size is connected to the second problem: the results of a statistical significance test depend heavily on the number of people in the jury pool (sample size), not merely on the degree or extent of the underrepresentation. Since common jury pool sizes even in medium and small communities are quite large for statistical purposes—much larger, for example, than sample sizes used

in national attitudinal surveys—small disparities become statistically significant.¹⁶

For example, Table 1 includes a jurisdiction in which the group is 30 percent of the population and 27 percent of the jury pool (third row). If the jury pool size is only 1,000—small compared to common jury pool sizes¹⁷—such a minor difference appears statistically significant. Because of its sensitivity to jury pool size, the statistical significance test detects minor disparities as significant in large jury pools and would invalidate too many jury systems.

In short, the statistical significance test has little to recommend it as a standard of jury

¹⁶ Statistical significance does not always suggest that the difference is meaningful or of practical importance. When sample sizes are sufficiently large, the greater sensitivity of any test will result in statistically significant but extremely small and unimportant differences. *See generally* Stephen T. Ziliak & Deirdre N. McCloskey, *The Cult of Statistical Significance: How the Standard Error Costs Us Jobs, Justice, and Lives* (2008).

¹⁷ The size of jury pools varies greatly across the country. According to a 2003-2006 survey conducted by the National Center for State Courts of 1,223 court districts serving 63 percent of the U.S. population, 25 percent of the surveyed court districts qualified 248 or fewer jurors annually; 25 percent qualified between 249 and 630 jurors annually; 25 percent qualified between 631 and 1,965 jurors annually; 15 percent qualified between 1,966 and 8,496 jurors and 10 percent qualified between 8,497 and 547,613 jurors annually. This information is on file with the National Center for State Courts and was gathered in preparation for its report, Gregory E. Mize et al., *The State-of-the-States Survey of Jury Improvement Efforts: A Compendium Report* (April 2007).

representativeness. While widely used for many applications, the test does not respond to the question at the center of the constitutional fair-cross-section guarantee: how should a court distinguish tolerable from unconstitutional underrepresentation in jury pools. Its results are confusing, misleading, and would result in too broad an invalidation of jury systems.

D. By Measuring The Extent Of Underrepresentation, Comparative Disparity Best Measures And Vindicates Claims Of Underrepresentation

The indifference of absolute disparity and statistical significance to the extent of underrepresentation can be resolved by incorporating the size of the underrepresented group into the analysis. This is exactly what the comparative disparity method does.

Comparative disparity measures the degree or extent of underrepresentation on a continuous scale from 0 percent (full representation) to 100 percent (complete exclusion). It is calculated by dividing absolute disparity by the percentage of the distinct group in the overall population. For example, the 70-percent-to-60-percent group from Table 1 has a 14 percent comparative disparity.¹⁸ The 30-percent-to-20-percent group has a 33 percent comparative

¹⁸ $10/70 \times 100\%$

disparity,¹⁹ and the 12-percent-to-2-percent group has an 83 percent comparative disparity.²⁰ A completely excluded group that is less than 10 percent of the population (and therefore cannot have a 10 percent absolute disparity) has a comparative disparity of 100 percent.²¹

Many courts, including this Court, have used comparative disparity to evaluate underrepresentation claims. In *Alexander*, for example, the Court considered both comparative disparity (though not by name) and statistical significance to find that a *prima facie* case of intentional discrimination had been established. *See supra*, at note 3.

Other courts have used comparative disparity alone, or in conjunction with absolute disparity, statistical significance, or some other measure. *See*,

¹⁹ $10/30 \times 100\%$

²⁰ $10/12 \times 100\%$

²¹ This expression of comparative disparity analyzes the reduction of the group's rate of inclusion in the jury pool, equals one minus the rate ratio, and is the one courts use in calculating comparative disparity. Alternately, comparative disparity can be expressed by examining the reduction of the group's odds of inclusion in the jury pool, which equals one minus the odds ratio. For example, the odds of the 70 percent group being included in the pool is the group's proportion / (1—group proportion) or $.7/.3$ or 2.333. As a result of the reduction in representation, the group's odds of representation are $6/4$ or 1.5. The comparative disparity of the odds is the (odds in the population)—(odds in the pool) / (odds in the population) or $(2.333) - (1.5) / 2.333$ or 35.7%. *See Statistics for Lawyers* at 37-38.

e.g., *Stephens v. Cox*, 449 F.2d 657, 659 (4th Cir. 1971) (noting that African Americans constituted at least 30 percent of the adult population, but made up only 15 percent of the grand and petit jurors selected for services, resulting in a “disparity of approximately 2-1”); *Berry v. Cooper*, 577 F.2d 322, 326 (5th Cir. 1978) (same); *United States v. Rogers*, 73 F.3d 774, 776 (8th Cir. 1996) (same); *Hirst*, 676 F.2d at 1258 (same); *United States v. Chanthadara*, 230 F.3d 1237, 1257 (10th Cir. 2000) (“The importance of the comparative disparity figure . . . is directly proportional to the size of the group relative to the larger community. We must consider both absolute and comparative disparities to determine whether a violation has occurred.”).²²

²² See also *Washington v. People*, 186 P.3d 594, 596 (Col. 2008) (holding that “no specific statistical measure should be excluded in a court’s analysis of a constitutional fair cross-section claim, and that a court should evaluate all the statistical evidence presented to determine whether the alleged underrepresentation is unfair and unreasonable . . . ”); *Diggs v. United States*, 906 A.2d 290, 296-97 (D.C. 2006) (noting that “courts generally rely on two concepts or measures (there are others) to determine” whether there is fair and reasonable representation on a jury pool, but denying defendant’s fair-cross-section claim because he presented no demographical evidence); *Idaho v. Paz*, 798 P.2d 1, 7-8 (Idaho 1990), overruled on other grounds by *Idaho v. Card*, 825 P.2d 1081 (Idaho 1991) (citing to both absolute and comparative disparity statistics in evaluating underrepresentation on a jury pool); *Azania v. Indiana*, 778 N.E.2d 1253, 1260 (Ind. 2002) (noting that federal courts have adopted both comparative and absolute disparity, and analyzing defendant’s claim using a comparative disparity method); *Minnesota v. Williams*, 525 N.W.2d 538, 542-43 (Minn. 1994)

(Continued on following page)

As even some of the courts that have endorsed it have noted, comparative disparity is not without its limitations. It can overstate the underrepresentation of very small groups. That is, when a group is particularly small, the loss of even a few expected members in the jury pool can result in a substantial comparative disparity.²³

But this limitation is easily overcome, simply by raising the level of comparative disparity required for small cognizable groups. This Court should require 15 percent comparative disparity, except where the distinct group is less than 10 percent, in which case the Court should use 25 percent. See David Kairys, Joseph Kadane and

(holding that “courts should be free to use all the statistical tools available,” and refusing “to rely solely upon” absolute disparity, which the court calls a “crude statistical approach”); *Williams v. Nevada*, 125 P.3d 627, 631, n.9 (Nev. 2005) (citing to both absolute and comparative disparity statistics in evaluating underrepresentation on a jury pool).

²³ This is not to say that all such criticism of comparative disparity is valid. Take for example, the common *reductio ad absurdum* argument posed in *United States v. Hafén*, 726 F.2d 21, 24 (1st Cir. 1984), of a .000002 distinct group (1 out of 500,000) that suffers 100 percent comparative disparity when excluded from the jury pool. Even if the pool is fully representative in this hypothetical community, the distinct group only has a .0002 percent chance being included in the jury pool, and only if the sole member is otherwise eligible to serve on a jury. Clearly, at some point, the population proportion becomes so small that the results are of no constitutional consequence. This case does not present such an extreme example.

John Lehoczky, *Jury Representativeness: A Mandate for Multiple Source Lists*, 65 Cal. L. Rev. 776, 798 n.112 (1977). Using this two-tiered standard for comparative disparity achieves the method's advantage of adequately quantifying the extent of a group's underrepresentation, while minimizing the possibility that underrepresentation of small distinct groups will be overstated.

Amici's proposed comparative disparity standard—unlike absolute disparity—vindicates the animating principles of the fair-cross-section guarantee. It vigilantly protects the representative jury pool, guards the jury's democratic purpose, and promotes the ideal of the impartial tribunal. *Taylor*, 419 U.S. at 530; *Holland*, 493 U.S. at 480-81. It is also consistent with other bright-line rules this Court has created to safeguard the opportunity for minority participation in the jury system. *See, e.g., Ballew v. Georgia*, 435 U.S. 223, 237 (1978) (finding that a five-member jury violated the Sixth Amendment, in part, because of evidence suggesting it “erect[ed] barriers to representation [of minority groups]”).

Amici's proposed rule, like other bright-line rules this Court has created, provides “some degree of certainty so that States and counties”—and, in this case, jury administrators—“may establish procedures with confidence that they fall within constitutional bounds.” *County of Riverside v. McLaughlin*, 500 U.S. 44, 53-54 (1991) (holding that the Fourth Amendment requires that a judicial probable-cause determination must generally be made within 48 hours of a

warrantless arrest). The suggested thresholds are, given the technology and the source lists available, easily achievable with reasonable effort and expense. They give jury administrators some flexibility while making it clear that representation should be taken seriously.

Finally, *amici's* proposed standard will not invalidate otherwise constitutional jury selection procedures. Demonstrating a disparity is only one part of larger inquiry under *Duren*. A disparity larger than the threshold, by itself, will not establish a fair-cross-section claim; systematic exclusion must also be proven. *Duren*, at 364.²⁴ And even if a claimant establishes a *prima facie* violation, the government may justify its process by demonstrating a significant state interest in the process. *Id.*, at 367-68.

CONCLUSION

For the foregoing reasons, *amici* respectfully submit that the Court should reject the absolute

²⁴ In this case, the siphoning of Grand Rapids jurors from the circuit court jury pool systematically excluded 85 percent of the jurisdiction's jury-eligible African Americans from the circuit court jury pool. A 4a; Joint Appendix 169a. See 1990 U.S. Census (85%, or 20,168 out of Kent County's 23,502 adult African American residents lived in Grand Rapids), available at http://factfinder.census.gov/servlet/DTable?_bm=y&context=dt&ds_name=DEC_1990_STF1_&CONTEXT=dt&mt_name=DEC_1990_STF1_P012C&mt_name=DEC_1990_STF1_P012D&-tree_id=100&-redoLog=false&-all_geo_types=N&-geo_id=06000US26081060&search_results=05000US26081&-format=&-lang=en (last visited December 13, 2009).

disparity measure—and certainly Petitioner’s proposal that more than 10 percent absolute disparity must be shown to establish any fair-cross-section claim. Instead, the Court should adopt the comparative disparity method, because it is scientifically valid and consistent with the important constitutional values of the fair-cross-section guarantee.

Respectfully submitted,

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